A QUALITY INITIATIVE TO IMPROVE THE INITIAL RATES OF BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB

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My Family

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ABBREVIATIONS

EIBF- Early initiation of breastfeeding

EBF- Exclusive breastfeeding

STS- Skin-to-skin contact

NVD- Normal Vaginal delivery

LSCS- Lower segment caesarean section

QI- Quality improvement

PDSA- Plan Do Study Act cycle

NICU- Neonatal Intensive Care Unit

WHO- World Health Organization

AAP- American Academy of Pediatrics

OR- Observation Room

LR- Labor Room

OT- Operation Theatre

ABSTRACT

Introduction: Initiating breastfeeding immediately after delivery plays an important role in newborns health and reduces neonatal mortality. Breastfeeding is delayed in most of the centres including ours, so this Quality Initiative (QI) study was planned to identify the factors hindering early initiation of breastfeeding and improving early breastfeeding rates.

Aims & objective: The primary objective of this study was to identify the issues for initiating early breastfeeding and develop quality improvement tools that would improve early breastfeeding practices and practice of establishing early skin-to-skin contact (STS). Secondary objective was to ensure sustainability of higher rates of early initiation of breastfeeding even after stoppage of the study.

Materials & Methods: This study was planned as a quality improvement initiative using sequential PDSA (Plan- Do- Study- Act) cycles. All term, vigorous newborns were enrolled. First phase was initiated by collecting the baseline data and identifying the barriers to early initiation of breast feeding (EIBF). Factors obtained were analyzed by fish bone diagram. The second phase involved implementing the developed QI tools for the factors hindering the EIBF. Mothers, their families and staff were sensitized by counselling, group discussions, posters and many other tools. The data was analyzed by SPSS software and p value<0.05 was taken as significant.

Results: We enrolled 95 cases in the first phase. EIBF was found only in 10.4% cases. Most common factors for delay of EIBF were found to be mode of delivery being cesarean section (76%), lack of knowledge (54.1%), late transfer of neonate to mother's side (52.6%), mothers not knowing the right way (48.9%), perceptions about importance of breastfeeding (37.5%), presence of post-operative pain (36.8%), lack of initiative to teach breastfeeding of pediatric and gynecology residents. In the second phase of the study,224 cases were enrolled after the implementation of QI tools. The rates of EIBF increased to 57% in PDSA cycle 2 but dropped in the next cycle. In the PDSA 4

rates were found to be 57.5%. Similarly, the practice of establishing S-T-S contact increased from a baseline of 9.5% to 47.6% but dipped in the next cycle. The sustainability rates were documented at 44.4% by the end of the study.

Conclusions: QI study could accomplish a significant increase in rates of EIBF in our setting and practice of S-T-S contact using PDSA methodology. This QI study should be applied in other settings to increase rates of EIBF.

Keywords: Quality Improvement, Breast Feeding, S-T-S contact, PDSA

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INTRODUCTION

Breastfeeding is a boon for newborn's life. Initiating breastfeeding as early as possible (within first hour of birth) plays a crucial role to ensure the optimal health status of infants, breastfeeding serves as a vital means of delivering essential nutrients, bolstering immunity, and fostering improved developmental outcomes[1]. World Health Organization (WHO) [2] and American Academy of Pediatrics (AAP) [3] recommended that the infants should be exclusively breast fed for first 6 months. Feedings should be initiated soon after birth unless medical conditions preclude them. Breast feeding practices are imperative to achieve growth, development and health. Besides, the breast milk also provide protection against medical conditions like diarrhoea, necrotizing enterocolitis, sepsis, celiac disease and recurrent otitis media.

Breast milk has antibacterial factors like secretory IgA, lactoferrin which is an immunomodulator and has an antimicrobial action, also acting as a trophic factor for intestinal growth. There is presence of casein, oligosaccharides and cytokines which have anti-inflammatory action and simultaneously fulfil the role of epithelial barriers. There are certain growth factors like epidermal growth factor, transforming growth factor and nerve growth factors which have an important contribution in the luminal surveillance, promotion of epithelial cell growth, suppression of lymphocyte function. Presence of enzymes like PAF (Platelet activating factor), glutathione peroxidase which prevents lipid oxidation make the breast milk superior to formula feeds which are preferred by >50% of parents during first 6 months of life.

It has been seen that Early initiation of breastfeeding (EIBF) and exclusive breastfeeding (EBF) for the first 6 months of life helps prevent 20% new born deaths and 13% under-five deaths. It is also known to reduce mortality secondary to neonatal sepsis, pneumonia and diarrhoea [4]. In one of the studies by Walters [5] a new cost of not breastfeeding tool was developed which found that 595379 deaths

from diarrhoea and pneumonia were attributable to the practice of not breastfeeding newborns. The total global economic losses were estimated to about 0.7% of global gross national income.

Substantial evidence supports the notion that infants who are breastfed face a lower risk of developing obesity in childhood. A meta-analysis has indicated that for each month of breastfeeding up to nine months of age, the likelihood of overweight is reduced by approximately 4% [6].Child malnutrition is a reason for 68% of the under five deaths in India, as published in LANCET recently [7]. Optimal breastfeeding has a great potential impact on prevention of child mortality due to malnutrition. Further, infants aged less than 6 months who were fed supplementary food, were found to develop susceptibility to diarrhoea, there by contributing to weight loss. [8]

The proportion of EBF rates in India remain <70%despite strong evidence regarding the benefits of breastfeeding.[8] According to WHO reports, 3 out of 5 babies are not breast fed in first hour of life globally while only 41% of infants under the age of 6 months are exclusively breastfed. [9]

India is supposed to be a breastfeeding nation but UNICEF [10] expanded global databases 2021suggested otherwise:

- Exclusive breastfeeding national data: 58%
- Early initiation of breastfeeding trends: 56%

Under WHO Global Nutrition Targets 2025, the goal for breastfeeding is to increase the rates of exclusive breastfeeding in first 6 months to 50% from the current figure of 41% at global level. India's goal is to increase the EIBF to 90% by 2025 [11]. In healthcare settings, the timely initiation of breastfeeding, particularly within the first hour of birth, hinges upon several critical practices surrounding the birthing process. Given the increasing emphasis on facility-based deliveries, it becomes paramount to discern the pivotal factors influencing maternal and newborn care. This understanding empowers healthcare providers and parents alike to participate in evidence-based newborn care activities, including the early initiation of breastfeeding, thereby contributing to the reduction of global newborn mortality rates. WHO recommends EIBF

within one hour of birth and no prelacteal feeding for improving maternal and new born health outcomes. Globally, EIBF can avert around 22% of new born deaths. The health and economic costs of sub-optimal breastfeeding are largely unrecognized.

Though there has been an improvement in the percentage of children who were exclusively breastfed when less than six months – from 55% in National Family Health Survey-4 [12] to 64% in NFHS-5 [13] but data [10] also reveals that 19.4% new born babies are being fed formula milk in first 2 days of life. The risk of infection can be effectively managed through early initiation of breastfeeding in children, coupled with timely administration of initial vaccinations. Optimal breastfeeding practices are affected by a number of factors like maternal age, education, socio-economic status, number of antenatal visits, receiving assistance with breastfeeding, infant's gender, hospital breastfeeding practices and support from the family. In India a notable difference in EIBF practices is observed between rural and urban populations because of significant differences in maternal education and sensitivity to have frequent health service contacts [14].Neonate's health promotion efforts shall focus on encouraging mothers to attend antenatal care visits to get antenatal education and counselling for breastfeeding [15].

In 1991, WHO and UNICEF launched a program Baby Friendly Hospital Initiative under the World Alliance for Breastfeeding Action (WABA) with an aim of improving the breastfeeding practices in hospitals with maternity services. Ten steps under breastfeeding health initiative (BFHI) ensure that every health facility providing maternity services and care for newborn shall:

I. Implement a documented breastfeeding protocol and ensure regular dissemination among healthcare personnel.
II. Provide comprehensive training to all healthcare staff on the necessary skills for executing the protocol effectively.
III. Educate expectant mothers on the advantages and proper techniques of breastfeeding.
IV. Support mothers in initiating breastfeeding within the first hour after delivery.

V. Demonstrate breastfeeding techniques and provide guidance on maintaining lactation, especially in cases of mother-infant separation.

VI. Refrain from offering newborns any food or fluids besides breast milk unless medically necessary.

VII. Practice continuous rooming-in, enabling mothers and infants to remain together around the clock.

VIII. Advocate for breastfeeding on demand to meet the infant's needs.

IX. Avoid introducing artificial teats or pacifiers to breastfeeding infants.

X. Facilitate the formation of breastfeeding support groups and make referrals to them upon discharge from the hospital or clinic.

Step 4 was revised in 2009 to promote bonding and enhance newborn health, it is recommended to facilitate immediate or within five minutes after birth, uninterrupted skin-to-skin contact between mother and baby for a duration of approximately an hour or more, unless medically necessary reasons dictate otherwise. (World Health Organization & UNICEF, 2009, p. 34)

Innocent declaration was formulated in year 1991 to promote, protect and support the breastfeeding practices. World Alliance for Breastfeeding Action (WABA) was formulated to execute the goals under the memorandum which is responsible for spreading awareness and importance of breast feeding at a global level. Every year WABA designs a theme and slogan to represent World Breastfeeding week celebrated in month of August. In 2016, Government of India launched “Mothers Absolute Affection” programme to promote, protect and support the breastfeeding practices through health care systems in order to increase the prevalence of exclusive breast feeding. [16] Following delivery, it is customary to conduct routine care for the newborn, which often leads to a temporary separation from the mother. This practice can result in a delay in the commencement of

breastfeeding. Translating interventions based on clinical evidences into effective clinical practices is a challenging task.

Keeping the above facts in mind, we realized that breastfeeding initiation is often delayed in our hospital setting. On problem identification we decided to start QI initiative in our unit with primary objective of highlighting the barriers and devise QI tools for the same which would help improve the breastfeeding practices while secondary objective will be to ensure sustainability of higher rates of breastfeeding at our hospital. Quality improvement is a methodical process driven by data to enhance the quality and safety of healthcare delivery, ultimately enhancing patient satisfaction and outcomes. It emphasizes the delivery of care that is safe, timely, effective, efficient, equitable, and patient-centered. This approach is rooted in principles aimed at continual enhancement of healthcare, employing iterative changes, learning, and adaptation. It involves the active involvement of both staff and patients to foster cultural, procedural, and systemic changes. The focus is on implementing small-scale modifications that yield significant improvements. Employing PDSA cycles stands as one of the most widely utilized tools in quality improvement efforts.

AIMS AND OBJECTIVES

- To study the prevalence of early initiation of breast feeding in first hour of life.
- To study the factors that are a deterrent to breastfeeding practices.
- To evolve quality improvement tools to help overcome these barriers for initiation of breast feeding in the first hour of birth.
- To improve the rates of early initiation of breastfeeding.

REVIEW OF LITERATURE

A study conducted by Sultania et al [17] examined the knowledge, attitudes, and practices regarding breastfeeding among women attending a tertiary care centre in India. The study found that while a majority of women in India practice breastfeeding, there exists a significant gap in knowledge and optimal breastfeeding behaviours. According to their findings, approximately 71.4% of mothers possessed general knowledge about breastfeeding and recognized breast milk as the preferred choice. However, only about 45% of mothers initiated breastfeeding within the first hour after birth. Additionally, around 27% of cases reported the use of pre-lacteal feeds. The study indicated that 82% of mothers fed colostrum to their infants, although local myths were identified as the primary reason for not doing so.

Rollins et al [18] studied the determinants of breast feeding and various interventions which could help build an enabling environment for breast feeding. They reported that there wasn't any negative association between caesarean section and early breastfeeding initiation in presence of adequate support. In this study antenatal and postnatal counselling provided more substantial results compared to those obtained by counselling during either period alone, while counselling the target group of fathers gave mixed results.

In a cross-sectional study carried out by Randhawa et al [19] in the semi-urban areas of the Patiala city found that only 27% were aware about starting of breastfeeding within an hour of birth but only 24% could start it within this time span. The primary reason for delayed initiation of breastfeeding often stems from a lack of knowledge. In a survey, approximately 51% of respondents viewed prelacteal feeding as an acceptable practice, while 55% perceived colostrum as harmful to the baby. These findings were echoed in a study conducted by Shaili et al [20] in the rural setting of Uttarakhand, where 82% of participants practiced prelacteal feeding, and 52% believed colostrum to be detrimental to the newborn. The research revealed a strong correlation between maternal education, higher socioeconomic status, family

history of antenatal care registration, and hospital delivery with exclusive breastfeeding practices. Additionally, nuclear families were more inclined to breastfeed their infants compared to those residing in joint or extended family setups. Furthermore, a significant positive relationship was observed between a history of antenatal care registration and hospital deliveries and the prevalence of exclusive breastfeeding.

A study conducted by Garg et al [21] in rural Punjab found that merely 23% of mothers were able to commence breastfeeding within the first 24 hours post-delivery. Similarly, research by Kumar et al [22] conducted in an urban population in Chandigarh indicated that merely 6% of mothers initiated breastfeeding within the first hour after birth, while 52% initiated it within the 1 to 6-hour timeframe.

A study based in a rural background in Karnataka by Benakappa et al [23] revealed that only 8% of mothers could initiate breastfeeding in first 4-6 hours whereas 62% mothers started sugar water and castor oil as prelacteal feeds. This study found major influence of grandparents and ANMs on breast feeding.

A study by R. Kaur et al [24] based in a secondary care hospital was a quality improvement initiative to improve the rates of early initiation of breast feeding. They investigated various deterrents to early initiation of breast feeding and made QI interventions using minimal resources and noticed significant positive changes immediately after training phase but dipped in subsequent months. But their study wasn't long enough to see the sustenance of results.

In a recent study [25] carried out jointly by the department of Pediatrics, the department of Obstetrics and Gynaecology and Anesthesiology at PGI, Chandigarh looked into the factors responsible for delayed breastfeeding initiation after caesarean section primarily and implementing quality improvement (QI) tools to study their impacts. They were able to increase their rates of initiation of breast feeding within one hour of caesarean section tremendously from 0 to 93% using minimal resources. Though they demonstrated enormous

success in a short span but couldn't assess the fact whether this will be long lasting and would last even when there are peak delivery loads.

The study by Patyal et al [26] based in MMU, Ambala conducted during 2018-19 pertained to improving first hour breastfeeding in newborns through QI. It is important to note that they excluded all newborns by caesarean section, premature babies. They concluded that it was feasible to increase the number of newborns being breast fed during the first hour in a low resource setting without increasing the workload of the staff. However, this study was hampered because of Covid.

In a study conducted by Ravi Sachan et al [27], various quality improvement techniques such as skin-to-skin contact and delayed cord clamping were employed to enhance the early initiation of breastfeeding, utilizing the Plan-Do-Study-Act (PDSA) approach. While the study provided a straightforward methodology to evaluate newborn care post-birth, it did encounter certain limitations. Documentation of routine newborn care for infants delivered via caesarean section and those requiring resuscitation immediately after birth was lacking. Furthermore, the study was unable to assess both short-term and long-term effects of the implemented quality improvement tools on neonatal mortality and morbidity. Another study by Ravi Sachan et al [28] emphasized on importance of using mothers on milk in pre-terms and babies with very low birth weight. It was a quality initiative wherein plan do study act cycles were run in order to reach a final conclusion that simple measures can increase the feeding by manifold.

In a study by Takahashi et al [29], which investigated the prevalence of early breastfeeding initiation and the factors contributing to delayed initiation, it was found that caesarean deliveries significantly hindered the early initiation of breastfeeding. Interestingly, the study did not establish a significant association between socio-demographic factors and the timing of breastfeeding initiation. Various factors identified included maternal intrapartum complications, issues related to nursing staff, high workloads, and a shortage of human resources. Notably, this study possessed a distinctive dataset, as it collected

standardized data concurrently across multiple countries during the same time period, using uniform record forms just prior to the discharge of women from hospitals.

In a separate study, Sisk et al [30] examined the significance of lactation counselling in promoting breastfeeding initiation rates and fostering breastfeeding without inducing maternal stress and anxiety.

In a study conducted by Luke et al [31], a multivariable regression model was utilized to examine the relationship between mortality and the timing of breastfeeding initiation. The analysis included 22,838 breastfed newborns who survived to 48 hours post-birth. The study revealed a significant association (p=0.03) between higher mortality rates and delayed initiation of breastfeeding. Specifically, mortality rates were found to be higher among infants whose breastfeeding initiation was delayed for 24 hours or more compared to those breastfed within 24 hours (RR = 1.41; 95% CI = 1.08-1.86). Consequently, this study underscores the critical role of improving breastfeeding practices in substantially reducing neonatal mortality rates.

In a study conducted in Tamil Nadu by Garcia CR et al [32], Multivariate binomial regression analysis was employed to assess the relationship between neonatal mortality and the timing of breastfeeding initiation (<12 hours, 12 to 24 hours, >24 hours) among infants who survived a minimum of 48 hours post-birth. The findings of this study echoed those of previous research, indicating that late initiation of breastfeeding (>24 hours) is associated with an elevated risk of neonatal mortality. Therefore, the study emphasizes the importance of prioritizing breastfeeding promotion programs in low-resource settings of India, where early initiation of breastfeeding could significantly mitigate neonatal mortality rates.

In a study conducted in rural Bangladesh by Raihana et al [33], the correlation between the timing of breastfeeding initiation and the likelihood of severe illness in newborns was investigated. The findings revealed that children who initiated breastfeeding after 48 hours (odds ratio [OR] 4.13, 95% CI 3.48-4.89, p < 0.001) and those who never

initiated breastfeeding (OR 4.77, 95% CI 3.52-6.47, $p < 0.001$) had the highest odds of developing severe illness. However, it's important to note a key limitation of the study, which is the potential for misclassification due to relying on mothers' reports of newborn danger signs. Additionally, there could be a risk of recall bias among mothers whose newborns experienced severe illness or mortality after birth.

The study conducted by Karim F et al [34] delves into breastfeeding initiation practices and the factors influencing the initiation of breastfeeding within one hour of birth in public health facilities in Bangladesh. The timing of breastfeeding initiation was observed, and its association was assessed with various factors such as the type of health facility, privacy in the delivery room, presence of separate staff for newborns, spontaneous breathing, skin-to-skin contact, and postnatal contact of mother or newborn with healthcare providers within one hour after delivery.

The study revealed that the odds of initiating breastfeeding within one hour of birth were significantly higher under certain conditions. These conditions included giving birth in district hospitals (AOR 3.5: 95% CI 1.5, 6.4), maintaining visual privacy in the delivery room (AOR 2.6: 95% CI 1.2, 4.8), newborns crying spontaneously (AOR 4.9: 95% CI 3.4, 17.2), engaging in skin-to-skin contact with mothers (AOR 3.4: 95% CI 1.9, 10.4), or being examined by healthcare providers in the facilities (AOR 2.4: 95% CI 1.3, 12.9).However, it's essential to acknowledge certain limitations of the study. For instance, the inclusion of only normal vaginal deliveries limits the generalizability of the findings to other delivery modes such as cesarean sections where babies may require advanced neonatal support. Additionally, factors like the socioeconomic status of the mothers and the level of family and paternal support were not explored, which could have provided further insights into breastfeeding initiation practices.

In the study by Luis F. Espino et al [35] in rural Mexican hospital used a simple and low-cost educational intervention to achieve the inclusion of skin-to-skin contact and early breastfeeding as part of standard care. In a short duration they were able to bring down the

average time of initiation of breastfeeding to 30 minutes with a 2-step educational intervention and including the practice of early skin-to-skin contact within 10 minutes of birth. There was a statistically significant improvement in the time of early breastfeeding by the end of the study. This study had several limitations too, first being the short duration of study which couldn't assess the long-term trends over time. Secondly, they didn't study the factors hindering the breastfeeding practices and challenges faced while establishing skin-to-skin contact. This study also failed to analyse the effects of skin-to-skin contact on long term breastfeeding practices after discharge.

Absolutely, the World Health Organization's (WHO) recommendation to initiate breastfeeding within the first hour of birth is grounded in extensive research highlighting its numerous benefits. Early initiation of breastfeeding, along with exclusive breastfeeding, serves as a crucial and cost-effective intervention in preventing infections and reducing infant mortality rates. It not only provides essential nutrients and antibodies crucial for the newborn's health but also fosters bonding between the mother and child. Therefore, promoting and supporting early initiation of breastfeeding is paramount for ensuring the optimal health and well-being of newborns worldwide.

Keeping in view the current status of breastfeeding in India, we have been motivated to study various hindrances and factors affecting the early initiation of breast feeding and rates of exclusive breast feeding. An observational study has been planned to be carried out at our hospital based on which the methods will be designed so as to overcome the observe hindrances. It has also been planned to observe the long-term sustenance of implied breastfeeding practices.

MATERIALS AND METHODS

Study site: The study was carried out in department of Paediatrics and Obstetrics & gynaecology, DMCH, Ludhiana.

Source of data: A quality improvement study was carried out on all term vigorous babies born by vaginal delivery and caesarean section in our hospital over a period of one year (November, 2022 to October, 2023).

Collection of Data: Based on predefined proforma, patient's demographic and clinical details were noted. The study was planned in 2 phases, phase one was to carry out a baseline cross sectional assessment to document the prevalence of early initiation of breast feeding and timing of initiation.

Various caregivers involved were mothers, family elders, lactation nurses, residents, paediatric faculty, maternal and childcare staff nurses. Assessment of time from delivery to initiation of breastfeeding was closely observed. Mothers were interviewed regarding problems they face. Root cause analysis was done using fish bone diagram. In the second phase of the study, the recorded responses were then analysed and QI tools were developed to overcome the factors hindering EIBF using sequential PDSA cycles.

The Centre for Disease Control and Prevention (CDCP) defines quality improvement as *"a continuous and ongoing effort to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality in services or processes which achieve equity and improve the health of the community"* [36].Quality improvement is a systematic method which involves engaging staff as well as the patients to change system by developing QI tools for improving patient experience by improving quality and safety of healthcare delivery. Running a PDSA cycle is one of the most common tools used in quality improvement.

Typical PDSA cycle

- **Plan:** A study pertaining to Breastfeeding prevalence, possible deterrents need for Quality improvement tools to boost

breastfeeding as early as possible were planned to be carried out in the department of Pediatrics and Obstetrics & Gynaecology, DMCH. For this purpose, extensive literature survey was done and presented. Aims and objectives were defined clearly for this study.

- **Do:** To achieve the aims and objectives of the study, sample collection was started. For this purpose, proforma was filled from all inborn patients with their consent.
- **Study:** The collected data was compiled and analysed using statistical tools. Based on results of analysis quality improvement (QI) tools were designed.
- **Act:** Developed tools were implemented at our hospital. During implementation period a brief observational study was carried out for a period of 2 months to evaluate impact of implementation of QI tools.
- Sequential PDSA cycles were run to assess the sustenance of implementing QI tools.

Methods of Data Collection

Inclusion criteria: All term vigorous inborn neonates weighing more than 1800 gm.

Exclusion criteria: Less than '35weeks' gestational age, stillbirths, APGAR <7 at 5 minutes, babies requiring extensive resuscitation at birth or requiring admission to NICU, women with severe maternal outcomes, any of the following conditions: women with HIV/AIDS, eclampsia, hysterectomy, admission to ICU, deliveries under general anaesthesia.

Statistical analysis: The statistical analysis was conducted utilizing the Statistical Package for the Social Sciences (SPSS Inc, USA). Data were presented using descriptive statistics including range, mean, standard deviation, median, frequencies (number of cases), and relative frequencies (percentages) as deemed suitable. Categorical data were compared using the Chi-square test, with the Fisher exact test employed when the expected frequency fell below five.

DURATION OFSTUDY: 12 MONTHS

STRATEGY

Phase I (November 1, 2022- January 31, 2023): Baseline cross-sectional assessment was done initially by collecting clinical, demographic data of patients with the primary objective of finding the time of initiation of breast feeds in neonates in normal vaginal delivery and caesarean section. Secondary objective was to highlight and study the factors hindering breastfeeding in a tertiary care hospital by questioning staff, mothers and their families using a predesigned proforma. This phase of study revealed the presence of a huge gap in knowledge, action and practices which needed to be bridged by active intervention and quality initiative.

Phase 2 (February 1, 2023- October 30, 2023): This phase of study involved analysing the factors obtained in the first phase to develop QI tools in order to improve the initial rates of breastfeeding by running sequential PDSA cycles. Each PDSA cycle gave clue for change in strategy of next cycle.

PDSA Cycles

PDSA 1 (February 1 2023- March 31 2023): This cycle started with formulation of a QI team consisting of residents, consultants and nursing staff. Two nursing staff were appointed and trained as 'Lactation counsellors'. The problems and bottlenecks in EIBF were identified, possible interventions were discussed and indicators for monitoring of outcomes were defined. A baseline data showing the rates of initial breastfeeding was collected and analysed. A QI team was formed consisting of Lactation nurses, residents and paediatric faculty. QI team spread information to others through teaching sessions, posters, group discussions, videos and pictures. Emphasis was placed on counselling mothers, their families and sensitizing the staff regarding benefits of breastfeeding and its importance to begin in the first golden hour of life. Correct way of latching was demonstrated. Use of animal milk and formula milk was strongly discouraged. Audit was done and data collected.

PDSA 2(April 1 2023- MAY 31 2023): The results of PDSA cycle 1 were displayed showing outcomes and it created further awareness. Counselling and group teachings were continued. Efforts at starting breastfeeding on the table and establishing early skin-to –skin contact were made. Dedicated staff allocated to assist mother in early latching in the labor room. The staff was sensitized and given education regarding the importance of starting breastfeeding in the first hour of life, also the right methods to breastfeed were taught to the newer batches of staffs. It was observed that all the babies born by LSCS were being transferred to the “Observation room”. Early transferring of babies to mother’s side and rooming in was encouraged.

PDSA 3(June 1, 2023- July 31, 2023): On the basis of results obtained in PDSA cycle 2, it was observed that compliance for early S-T-S contact was poorer in case of babies born by LSCS. Regular repeated reminders were given to residents, staff to discourage use of formula milk, transferring the baby early to mother’s side. Also, it was informed to document the indication of transferring to the observation room after birth. Focus on sensitization regarding the importance of early initiation of breastfeeding and establishing skin-to-skin contact within one hour after the birth.

PDSA 4(August 1, 2023- October 30, 2023): This cycle dealt with analysing the collected data in previous PDSA cycles and aiming to reinforce the QI tools developed. This cycle was run to assess the sustainability of the imposed QI tools and thus the rates of early initiation of breastfeeding.

	PDSA 1	PDSA2	PDSA3	PDSA4
PLAN	Formed QI team. Analyse the problems leading to delay in breastfeeding Emphasis on counselling	Assess rates Assigning dedicated lactation counsellors Encouraging early transfer from OR to mother's side. BF on table immediately after delivery Teaching staff to assess adequacy of latching on Assessed feasibility of starting feeding on table Family counselling	Rates reassessed and factors hindering reanalysed. Improve compliance & sensitization Sustaining counselling Establishing BF and STS	Rates reassessed and factors hindering reanalysed. Sustaining counselling Repeated reminders to staff on duty for early initiation and establishing STS for one hour after birth
DO	Posters, BF counselling, group discussions, sensitizing new staff and families. Demonstrating the correct way of latching for new staff Discouraging use of formula milk	Establishing early STS and breastfeeding in 2nd stage Reinforcement and motivation to mothers as well as the staff. Antenatal counselling. Assistance provided by staff to mother. Teaching staff to assess LATCH score and method of latching	Creating awareness and group discussions clearing out doubts by residents and lactation counsellors Discouraging use of formula milk soon after birth Early transfer of baby to mother's side to motivate early rooming in. Reminding residents, staff and SR to establish early STS.	Continuing with counselling, interactive sessions with mothers, their families and the staff. Establishing early S-T-S contact for atleast 1 hour after the birth.

STUDY	Lack of initiative, hesitation and overworked found. Because of multiple sections at a time and PG conveniently shifts all babies to OR from LROT where all babies are fed formula milk. Lack of special staff for early latching. Day-night shift difference. Some babies kept in OR for long on family's request	Found practically difficult to feed on table as HCW busy doing other chores while mother is exhausted. Mothers feeling embarrassed. Adherence to STS not universal	Low compliance for establishing STS contact in case of LSCS	Rates of EIBF reached at 57.8% and rates of S-T-S contact at 44.4%
ACT	Encouraging early transfer of baby to mother's side. Documentation of indication for transfer to OR. Staff and mothers sensitized. Role allocation. Family counselling	Restricted entry into 2nd stage. Continuation of counselling ad sensitization. Encouraging staff on duty and residents attending the delivery Family counselling	Sensitizing regarding importance of STS Documentation of indication of delay in breast feeding and number of times baby took formula milk.	Encouraging mothers and their families Encouraging staff on duty and residents attending the delivery.

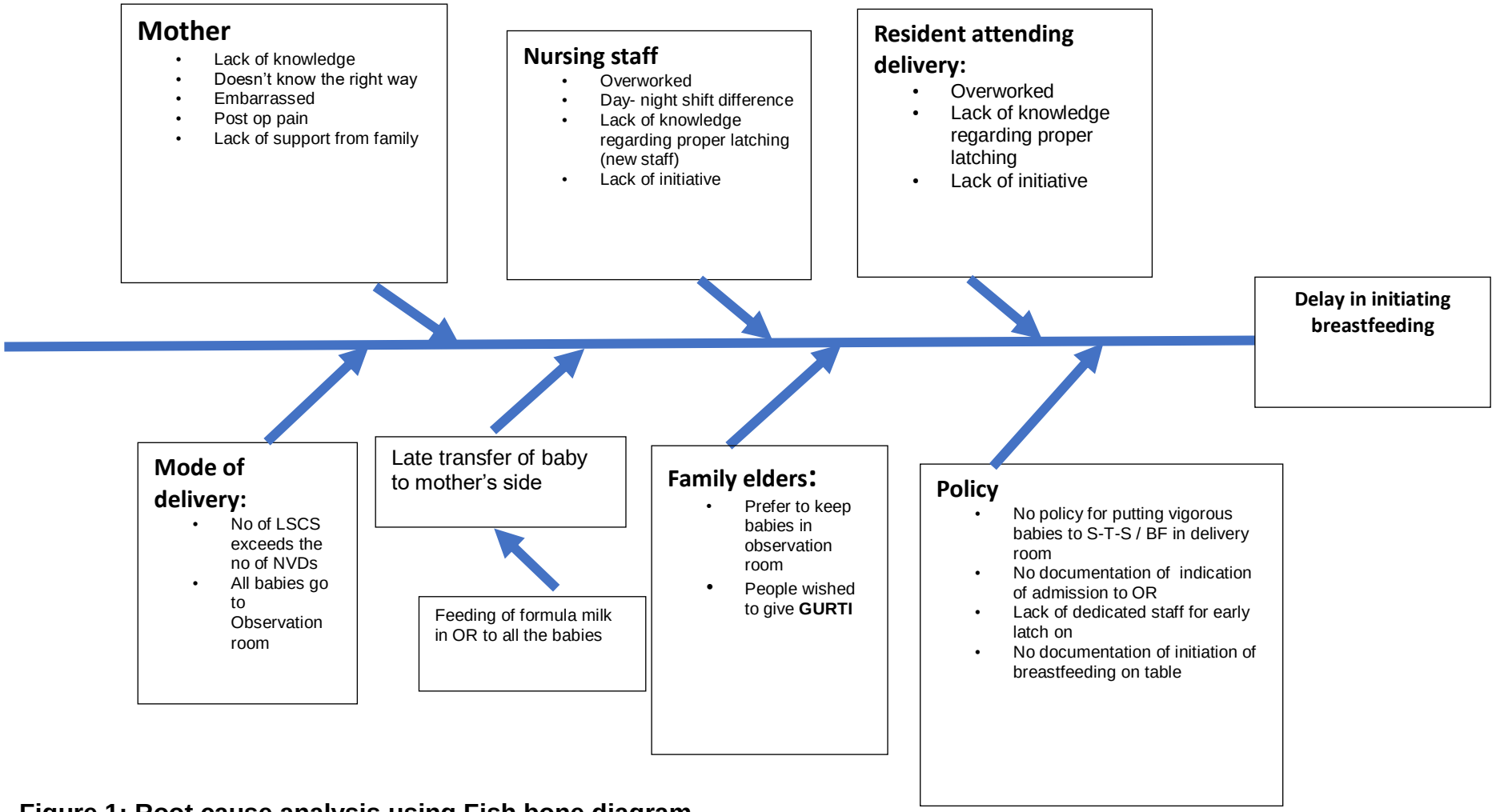
Mother
Lack of knowledge
Doesn't know the right way
Embarrassed
Post op pain
Lack of support from family
Nursing staff
Overworked
Day- night shift difference
Lack of knowledge regarding proper latching (new staff)
Lack of initiative
Resident attending delivery:
Overworked
Lack of knowledge regarding proper latching
Lack of initiative
Delay in initiating breastfeeding
Mode of delivery:
No of LSCS exceeds the no of NVDs
All babies go to Observation room
Late transfer of baby to mother's side
Feeding of formula milk in OR to all the babies
Family elders:
Prefer to keep babies in observation room
People wished to give GURTI
Policy
No policy for putting vigorous babies to S-T-S / BF in delivery room
No documentation of indication of admission to OR
Lack of dedicated staff for early latch on
No documentation of initiation of breastfeeding on table

Figure 1: Root cause analysis using Fish bone diagram

Routine care practice before our study

Earlier, the customary practice was to receive the newborn and keep under the radiant warmer where was dried, stimulated and assessed. After recording the APGAR, administration of vitamin K, applying the identification bracelet, footprints were obtained and weight measured and recorded. Later the newborn was swaddled and after a brief identification by mother was transferred to the observation room until the mother is in the operation theatre. In the observation room, baby was kept under the radiant warmer and either fed formula feed or dextrose 10% by intravenous route. After this period when mother was shifted to the recovery room, baby was shifted to mother's side once mother is confident about feeding the baby.

Proposed change in practice

After the first phase data auditing, all the factors hindering breastfeeding were enumerated. A QI team was formulated which focussed on educating the concerned staff, residents and mothers along with their families regarding the need for breastfeeding, right way to initiate breastfeeding. Changes were made at all levels in the routine practice. Baby after being born was given initial care, tagging and vaccination under the radiant warmer after which vigorous babies not requiring resuscitation or oxygen support were put on mother's chest for skin-to-skin contact and started EIBF. Those requiring oxygen support or observation were transferred to observation room after documentation of indication for transfer and after monitoring the baby was transferred back to mother and EIBF started as soon as possible.

QI TOOLS USED IN PRESENT STUDY

- Designating LACTATION COUNSELLORS
- Posters educating regarding the importance of breastfeeding
- Lectures to improve awareness amongst the staff as well as the mothers
- Teaching mothers the right way to latch and breastfeed
- Documenting indication for observation room admission

- Start EIBF on table in labour room
- Establishing STS contact
- Family counselling along with mother
- Group discussions
- Encouraging early transfer of baby to mother's side

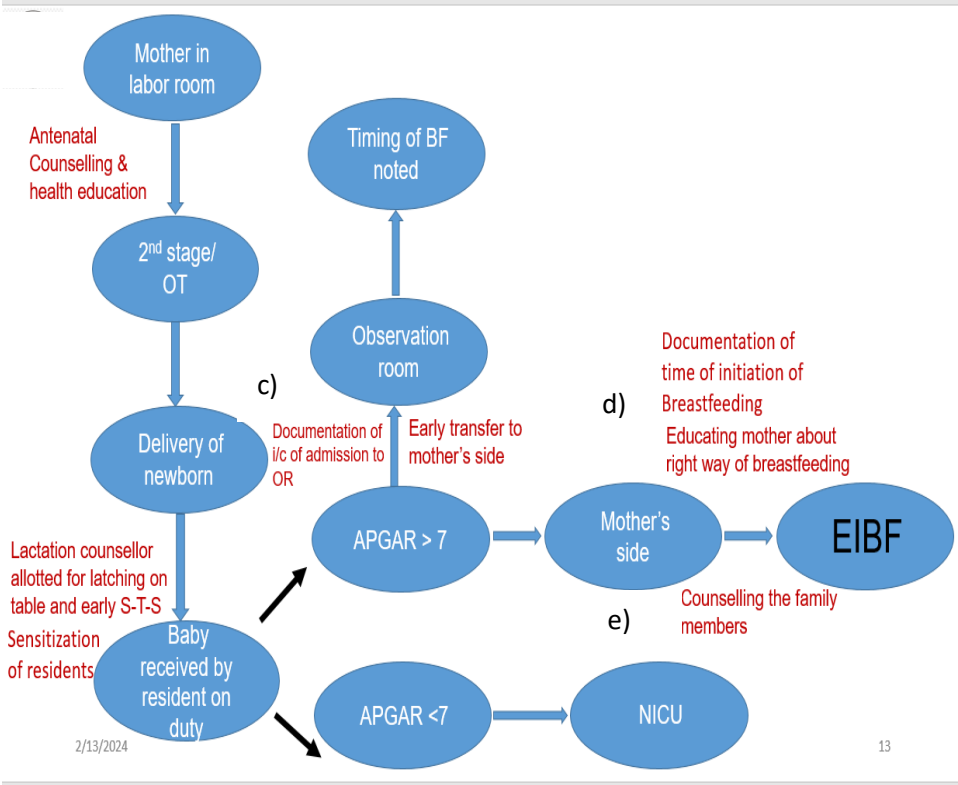

Figure 2: Routine care practice at our hospital and interventions made during Quality Initiative

This is a representation of routine delivery care conducted. It shows interventions made at various levels to encourage the establishment of early breast feeding.

a) Educating mothers about importance of breastfeeding and demonstrating the right way, Antenatal counselling and sensitizing the families before delivery by the staff on duty.

b) A dedicated staff nurse "Lactation counselling" was appointed to help mothers feed and establishing breast feeds within one hour of

birth and skin-to-skin contact on the table itself. Also sensitizing the residents attending the delivery.

c) After the c-section, documentation of indication of admission to the observation room. Babies already transferred to observation room while mother inside OT should be transferred to mother's side as early as possible.

d) The time of initiating breast feeds to be documented by the attending team

e) Sensitizing and educating the family members regarding importance of breastfeeding.

DAYANAND MEDICAL COLLEGE & HOSPITAL
LUDHIANA
stimulates the release of hormones to support breastfeeding
long term benefits like improved brain development & parental attachment
Early skin to skin contact (Kangaroo care)
I am protecting and getting closer to my child. I feel connected to him.
calms and relaxes both mother and baby
stronger immune system
regulates the baby's heart rate and breathing, helping them to better adapt to life outside womb
regulates temperature
stimulates digestion and and interest in feeding
higher blood oxygen levels
Dr. Kirti Puri, JR Paeds, DMCH.

Figure3: Poster for education regarding Early establishment of Skin-to-skin contact

"A bright and successful future starts from the right kind of nutrition"
BFHI
Baby Friendly Health Initiative
1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant woman about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within 1 hour of the birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.
6. Give new born infants no food or drink other than breastmilk unless medically indicated.
7. Practice "rooming in" by allowing mothers and infants to remain together 24h/d.
8. Encourage breastfeeding on demand
9. Give no artificial teats, pacifiers, dummies, or soothers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from hospital or clinic.

Figure 4: Poster showing ten steps of Baby Friendly Health Initiative

DAYANAND MEDICAL COLLEGE & HOSPITAL
LUDHIANA
Mom's milk is soul food to feed and immunise the newborn- a Nature's health plan.
Colostrum is the liquid gold
Protects from obesity and shapes body
Reduces post delivery bleeding and anemia
Provides calories and omega acids for brain development
Prevents under 5 deaths
Provides antibodies
Better bioavailability of iron and calcium
Helps create mother- child bond
Better intelligence
Lesser diabetes, heart disease,lymphoma
Prevents hypothermia
Easily digestible
Provides protective benefit to mother against breast and ovarian cancer
Environment friendly
Breast milk is the best milk
STEP UP FOR BREASTFEEDING
EDUCATE AND SUPPORT
ENABLING BREASTFEEDING
Making a difference for working parents
WABA | WORLD BREASTFEEDING WEEK 2022
Dr. Kirti Puri, JR Paeds, DMCH

Figure 5: Poster regarding the benefits of breast feeding used for sensitization and education of staff, mothers and their family members

Figure 6: Sensitizing and educating the staff regarding breastfeeding practices

Figure 7: Counseling the family members and group discussion regarding the knowledge, action and practices

Figure 8: Encouraging Early Skin-to-Skin Contact in the operation theatre

Figure 9: Starting breastfeeding on table in a normal vaginal delivery

Figure 10: Helping mothers feed their newborns and teaching mothers the right way to breastfeed

Figure 11: World breastfeeding week was celebrated in collaboration with gynaecology department and residents also sensitized regarding the need for early initiation of breastfeeds and establishment of skin-to-skin contact.

Figure 12: Teamwork with department of obstetrics & gynaecology

1. KEY DRIVER'S DIAGRAM

After the baseline data was collected and audited possible reasons for delayed initiation were elicited by fishbone analysis and a key driver diagram was developed for outcome measures. Analyzing the barriers to initiating breastfeeding, commonly known as fish bone analysis, has identified various factors related to people, policy, place, and processes. These encompass a range of issues such as lack of knowledge or support from healthcare providers and family members (people), inadequate breastfeeding policies or guidelines (policy), unsupportive or uncomfortable environments for breastfeeding in healthcare facilities (place), and inefficient or inaccessible breastfeeding support systems and procedures (processes). Identifying and addressing these barriers are crucial steps in promoting and facilitating breastfeeding initiation to improve infant health outcomes.

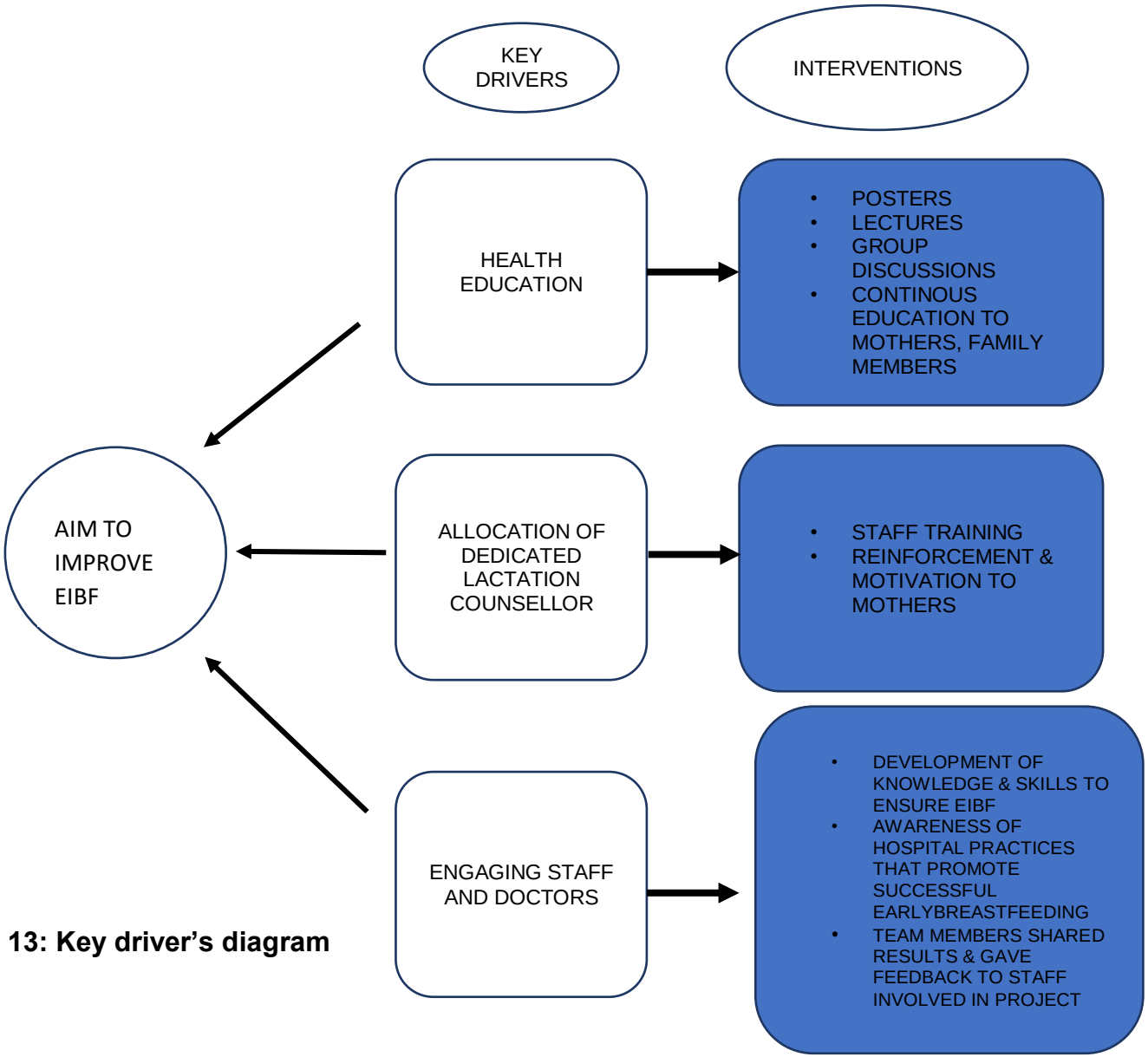
KEY DRIVERS
INTERVENTIONS
HEALTH EDUCATION
POSTERS
LECTURES
GROUP DISCUSSIONS
CONTINOUS EDUCATION TO MOTHERS, FAMILY MEMBERS
AIM TO IMPROVE EIBF
ALLOCATION OF DEDICATED LACTATION COUNSELLOR
STAFF TRAINING
REINFORCEMENT & MOTIVATION TO MOTHERS
ENGAGING STAFF AND DOCTORS
DEVELOPMENT OF KNOWLEDGE & SKILLS TO ENSURE EIBF
AWARENESS OF HOSPITAL PRACTICES THAT PROMOTE SUCCESSFUL EARLYBREASTFEEDING
TEAM MEMBERS SHARED RESULTS & GAVE FEEDBACK TO STAFF INVOLVED IN PROJECT

Figure 13: Key driver's diagram

OBSERVATIONS AND RESULTS

PHASE 1 (November 2022- January 2023): Baseline study results

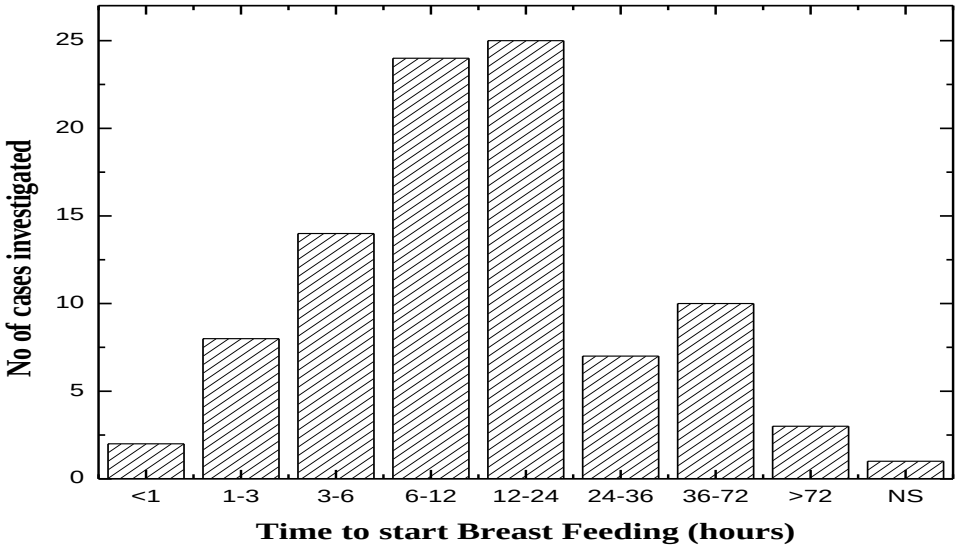

Figure 14: Typical distribution of time to start breast feeding of neonates

Table 1: Frequency table of time to start breastfeeding of neonates in the baseline study

Time to start Breast Feeding (hours)	No. of cases investigated	% age
<1	2	2.1
1-3	8	8.4
3-6	14	14.7
6-12	24	25.2
12-24	25	26.3
24-36	7	7.3
36-72	10	10.5
>72	3	3.1
Not Started (NS)	2	2.1

The Figure 14 describes the baseline data of early initiation of breastfeeding in about 10.5% cases. Maximum number of cases started breastfeeding at 12-24 hours of life followed by 6-12 hours. Average time to initiate breastfeeding was found out to be 19 hours.

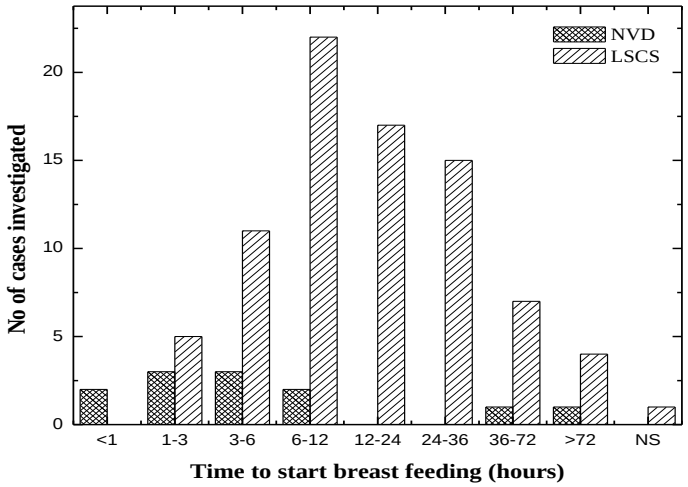

Figure 15: A comparison of time to start breast feeding of neonates born by normal delivery and C-section

Table 2: Association between mode of delivery and time to start breastfeeding.

	Time to start breastfeeding												
		Not started	<1 H	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	>72 HRS	TOTAL	CHI SQUARE	P-VALUE
mode of delivery	LSCS	2	0	5	11	22	17	15	7	4	83	26.723	0.001
	NVD	0	2	3	3	2	0	0	1	1	12		

The Figure 15 describes the differences between time to EIBF in caesarean and normal vaginal deliveries. In our hospital, numbers of caesarean deliveries exceed the normal vaginal deliveries. Only 2.1% cases started breastfeeding within first hour of birth in NVD whereas none in caesarean delivery. Maximum numbers of cases amounting to 22.9% were found to start breastfeeding between 6-12 hours followed by 12-24 hours of life.

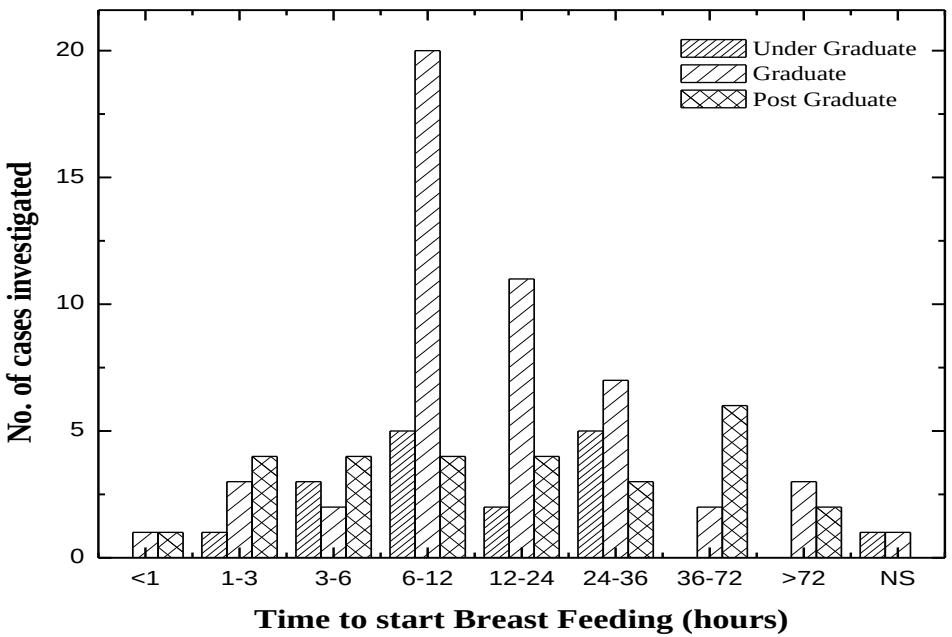

Figure 16: A comparative study of time distribution to start breast feeding of neonates and qualifications of their mothers. (Qualifications grouped as (a) UG means 10^{th} and 12^{th}; Grad means B.Ed./ BA/B.Sc. PG means MA/M.Sc./M.Ed. etc.)

Table 3: Association between maternal education and time to start breastfeeding

		TIME TO START BREASTFEEDING											
		NOT STARTED	<1 HR	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	>72 HRS	TOTAL	CHI SQUARE	P-VALUE
Education	UG	1	0	1	3	5	2	5	0	0	17	15.593	0.792
	GRAD	1	1	3	2	20	11	7	2	3	50		
	P.G.	0	1	4	4	4	4	3	6	2	28		

The Figure 16 draws out a comparison between cases starting breastfeeding and level of education of mothers. 17 (17.8%) mothers were undergraduates and 29% started breastfeeding within 6-12 hours of life. 52.6% mothers were graduates out of which 40% started breastfeeding at 6-12 hours of lives of newborns. 29.4% mothers were postgraduates out of which 17.8% mothers could initiate breastfeeding within first hour of life.

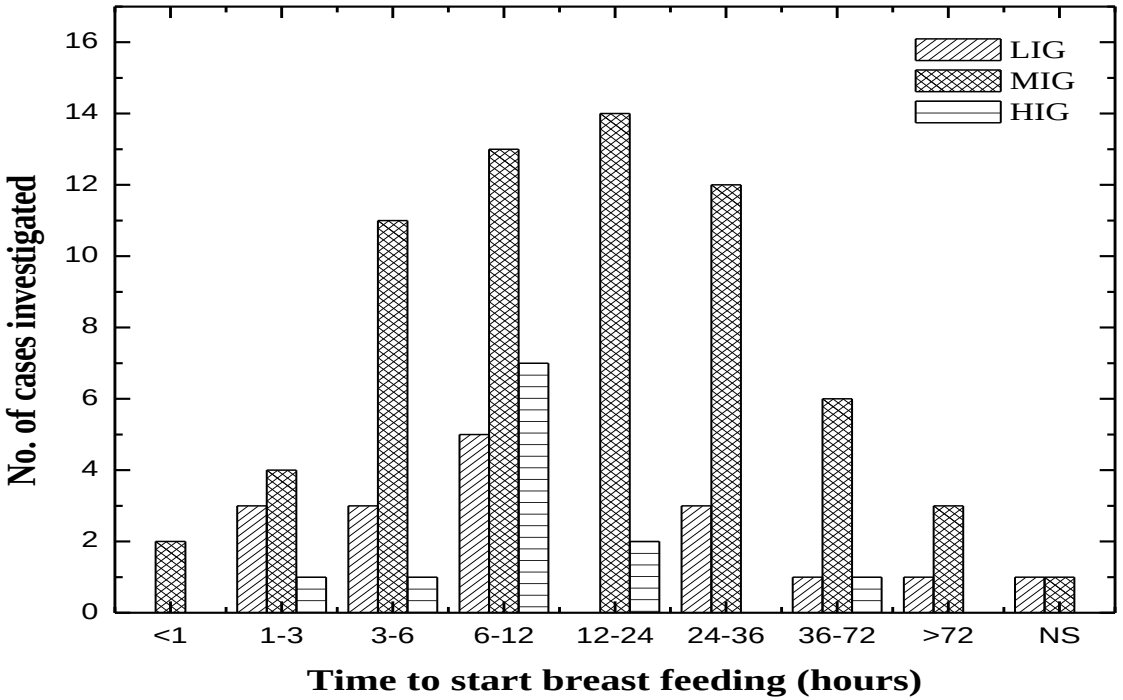

Figure 17: A comparative study of time distribution to start breast feeding of neonates and income status of their families.

Table 4: Association between Socio-economic status and time to start breastfeeding

	TIME TO START BREASTFEEDING											
		NOT STARTED	<1 HR	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	>72 HRS	TOTAL	CHI SQUARE	P-VALUE
S.E. Status	HIGH	0	0	1	1	7	2	0	1	0	27	77.723	0.001
	LOWER	1	0	3	3	5	0	3	1	1	5		
	MIDDLE	1	2	4	11	13	14	12	6	3	63		

The Figure 17 draws out a comparison of time distribution of mothers according to the socio-economic groups. Maximum number of mothers (69.4%) belonged to the middle-class group out of which 21.1% fed their newborns within 12-24 hours of life while 19.6% and 18.1% initiated breastfeeding at 6-12 and 24-36 hours of life respectively.

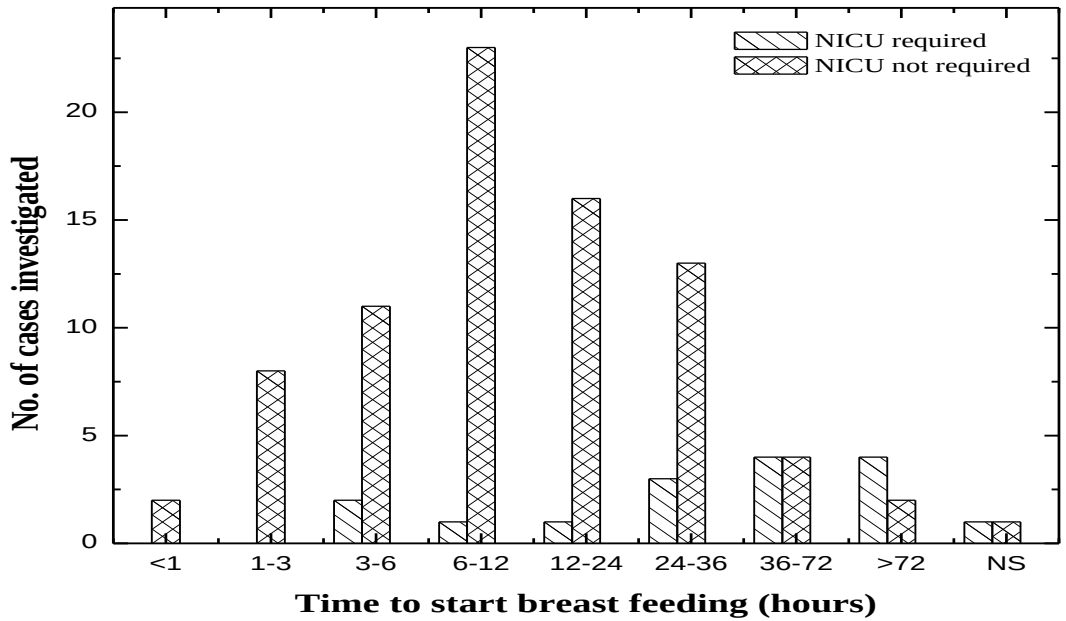

Figure 18: A comparative study of time distribution to start breast feeding of neonates and their admission in NICU immediately after birth.

Table 5: Frequency table of comparison of time to start breastfeeding in newborns those requiring admission to NICU with those who don't require admission.

Time to start Breast Feeding (hours)	No. of cases of neonates admitted to NICU	No. of cases of neonates not admitted to NICU
<1	0	2
1-3	0	8
3-6	2	11
6-12	1	23
12-24	1	16
24-36	3	13
36-72	4	4
>72	4	2
Not Started (NS)	1	1

The Figure 18 exhibits the comparison of time distribution to start BF of neonates admitted to NICU immediately after birth with those who do not require NICU. Out of a total of 95 newborns 16 newborns required admission to NICU at birth. Amongst the newborns requiring NICU admission breastfeeding was initiated in 2.5% at 36-72 hours of life and after 72 hours in 2.5% cases. The newborns not requiring admission to NICU amounted to 83.1%.

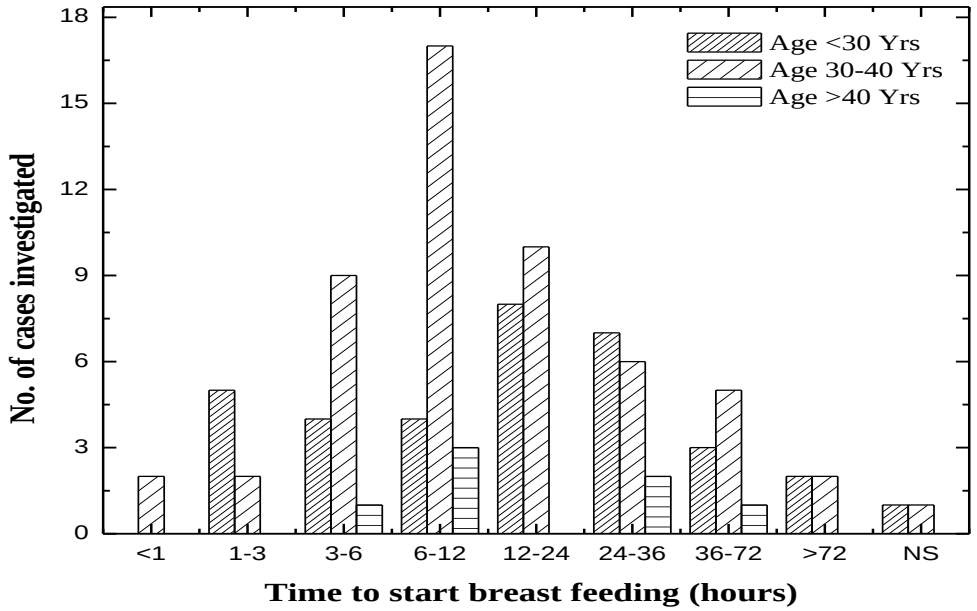

Figure 19: A comparative study of the ages of mothers and the time distribution to start breastfeeding of their neonates. Age Group 1: Mother's age <30Yrs; Group 2: Mother's age between 30-40 Years; Group 3: Mother's age between >40 Years;

Table 6: Association between time to start breastfeeding and maternal age group

		time of starting breast feeds									Total	Chi-square value	p-value
		NOT STARTED	<1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	> 72 HRS			
AGE GROUP	1	1	0	5	4	4	8	7	3	2	9	15.562	0.341
	2	1	2	2	9	17	10	6	5	2	41		
	3	0	0	0	1	3	0	2	1	0	45		

The Figure 19 depicts the distribution to start BF of newborns with respect to age distribution of the mothers enrolled. 56.8% mothers belonged to age group of 30-40 years, and the EIBF could be established in 7% cases of enrolled cases.

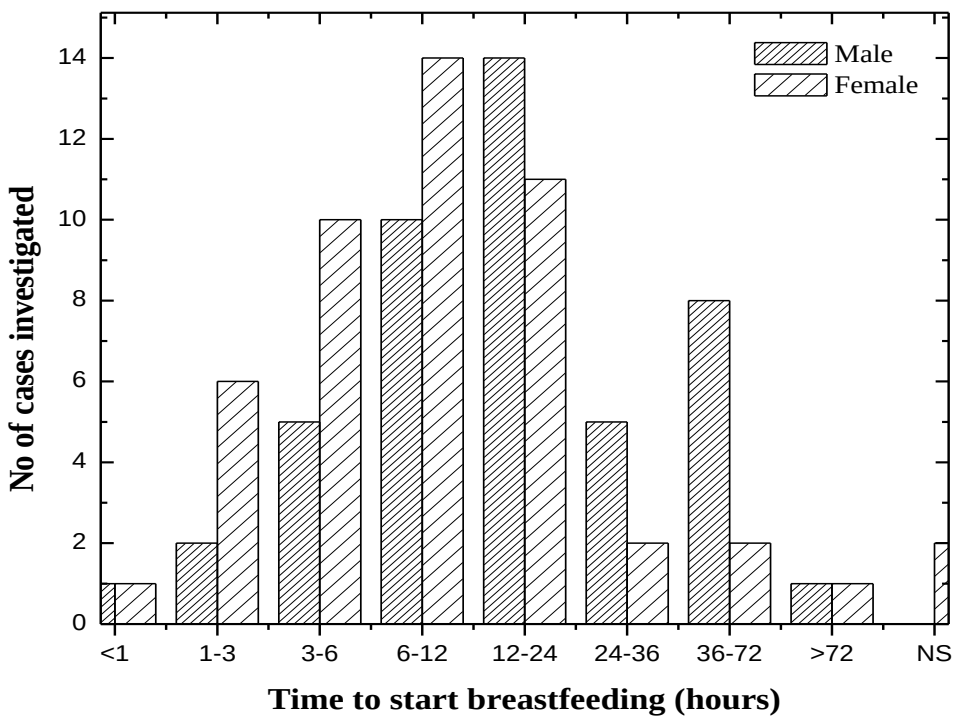

Figure 20: Distribution of time to start breastfeeding as a function of gender of neonates.

Table 7: Association of newborn's gender and time to start breastfeeding

	TIME TO START BREASTFEEDING												
		NOT STARTED	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	> 72 HRS	TOTAL	CHI SQUARE	P-VALUE
Gender	F	2	1	6	10	14	11	2	2	1	49	11.513	0.118
	M	0	1	2	5	10	14	5	8	1	46		

The above plot (Figure 20) summarises differences in the time distribution of initiating breastfeeding in male and female newborns. EIBF was established in about 3.1% males while 7.1% of female newborns.

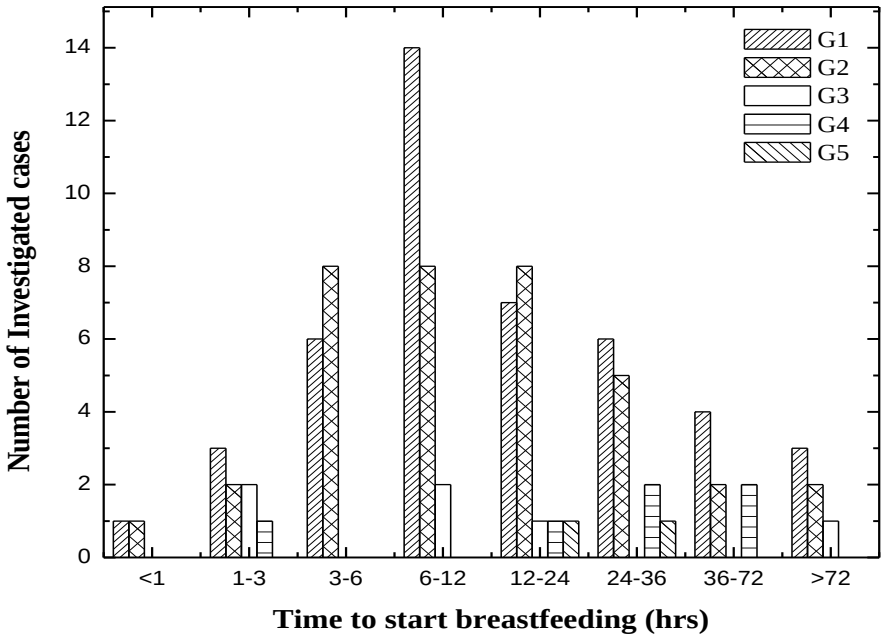

Figure 21: Gravidity vs distribution of time to start breastfeeding.

Table 8: Association between time to start breastfeeding and maternal gravidity

		TIME TO START BREASTFEEDING											
		NS	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	24-36 HRS	36-72 HRS	> 72 HRS	TOTAL	CHI SQUARE	P-VALUE
GRAVIDA	1	0	1	3	6	14	7	6	4	3	44	26.419	0.55
	2	2	1	2	8	8	8	5	2	2	36		
	3	2	0	2	0	2	1	0	0	1	7		
	4	0	0	1	0	0	1	2	2	0	6		
	5	0	0	0	0	0	1	1	0	0	2		

Among the number of mothers enrolled, 45.8% were primigravidas and EIBF was established only in 4.1% cases.

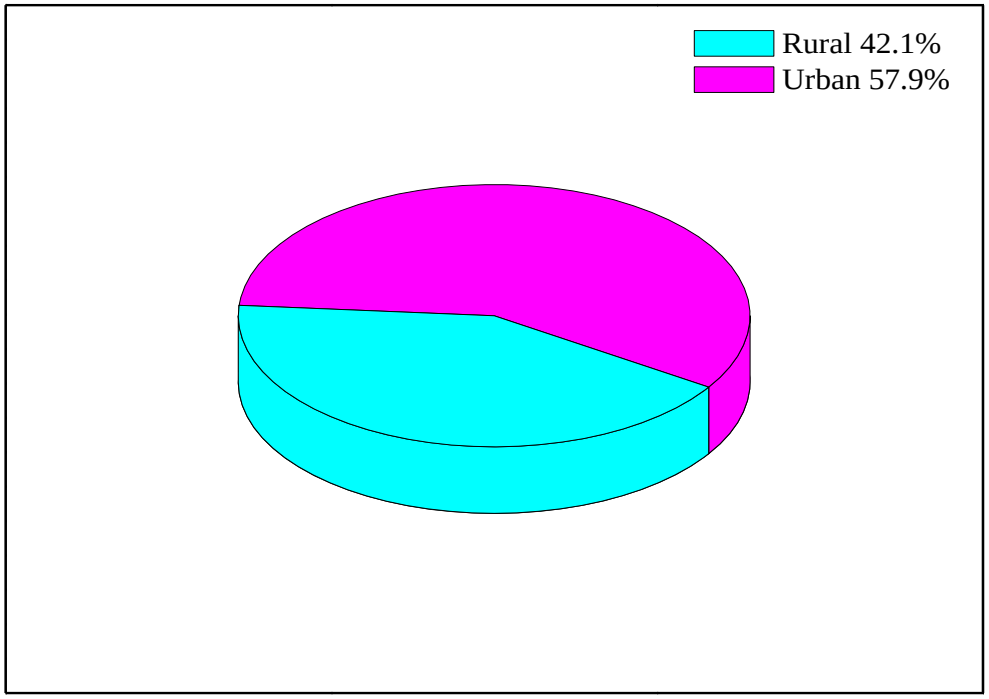

Figure 22: Percentage of families residing in rural and urban areas involved in present study.

Table 9: Association between area of residence and time to start breastfeeding

TIME TO START BREASTFEEDING												
		NOT STARTED	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	> 24 HRS	>72 HRS	TOTAL	CHI SQUARE	P-VALUE
RURAL / URBAN	R	0	1	2	7	7	6	15	2	40	10.23	0.176
	U	1	1	6	7	9	19	12	0	55		

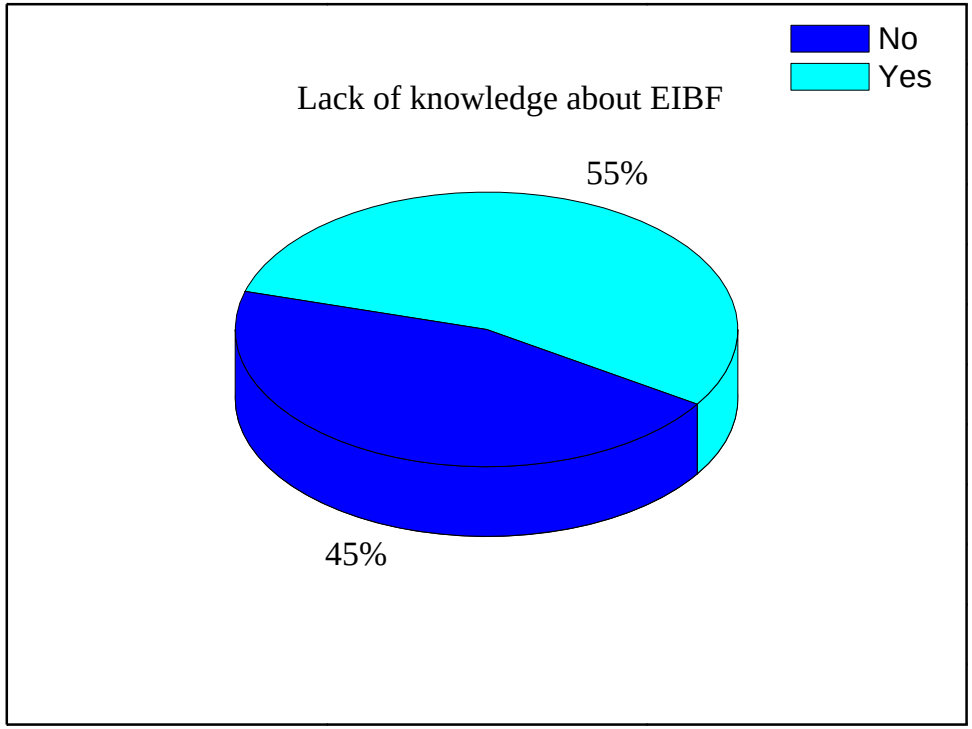

Figure 23: A plot indicating percentage of mothers with lack of knowledge about advantages of EIBF.

Table 10: Association between lack of knowledge regarding breastfeeding and time to start breastfeeding

TIME TO START REASTFEEDING												
		NS	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	>24 HRS	>72 HRS	TOTAL	CHI SQUARE	P-VALUE
LACK OF KNOWLEDGE	N	0	2	3	7	9	12	9	1	43	5.991	0.541
	Y	1	0	5	7	7	13	18	1	52		

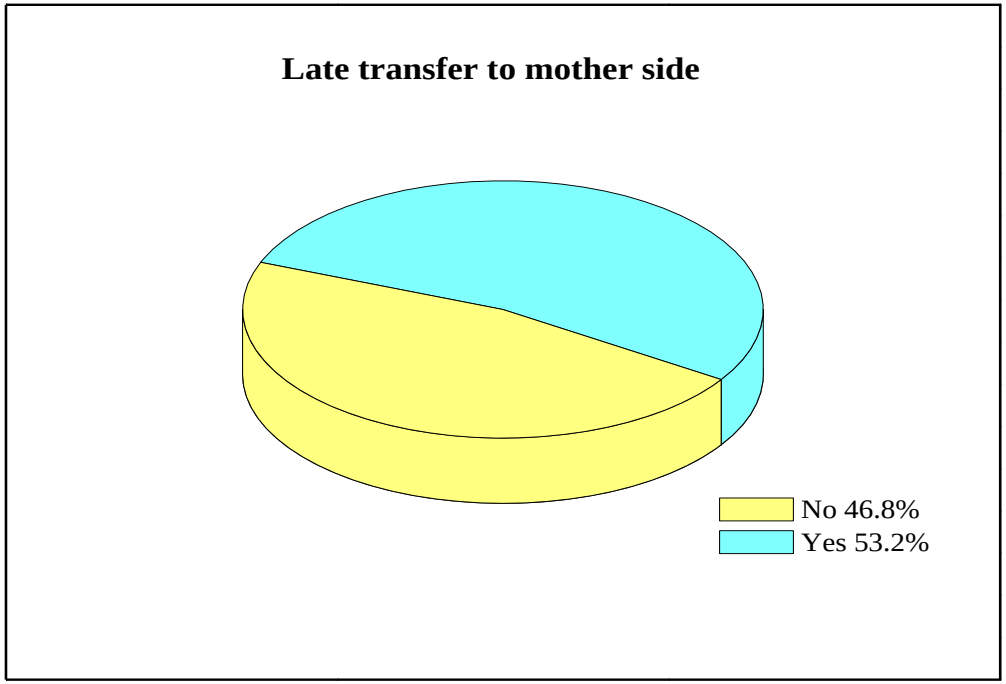

Figure 24: A plot indicating percentage of cases of late transfer to mother side.

Table 11: Association between the practice of late transfer to mother's side and time to start breastfeeding

TIME TO START BREASTFEEDING												
		NOT STARTED	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	> 24 HRS	> 72 HRS	TOATAL	CHI SQUARE	P-VALUE
LATE TRANSFER TO MOTHER SIDE	N	1	2	7	8	10	8	9	0	45	16.809	0.019
	Y	0	0	1	6	6	17	18	2	50		

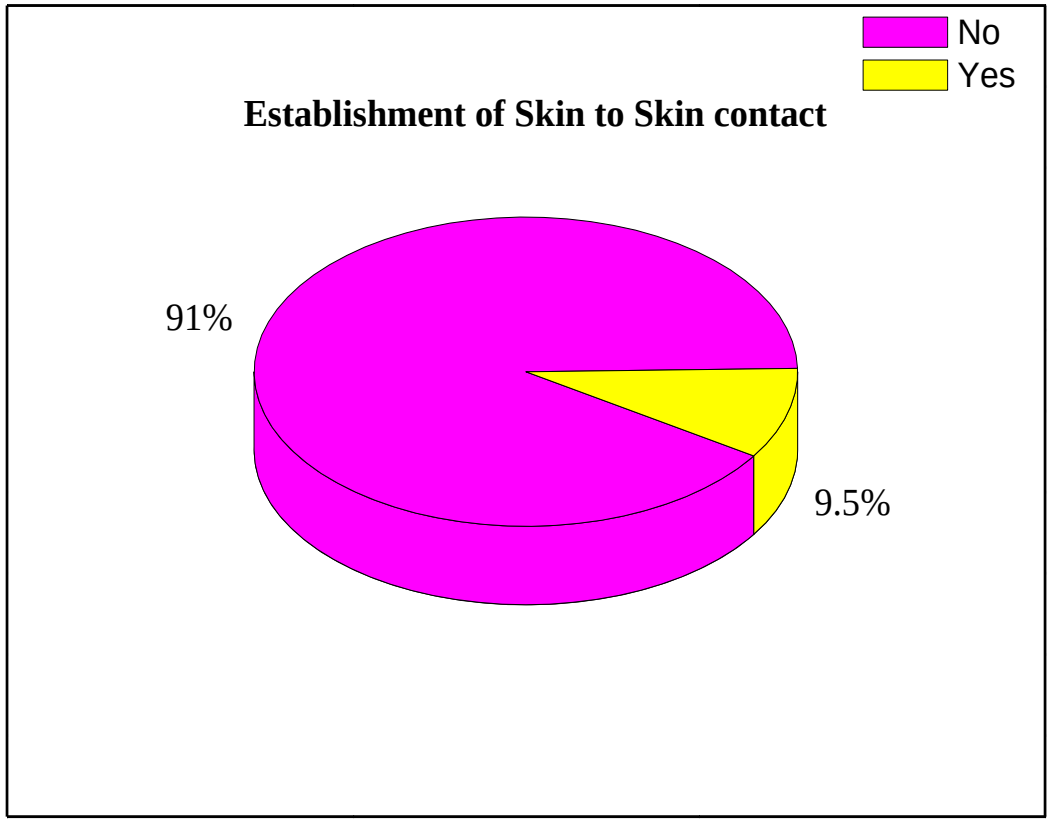

Figure 25: A plot indicating percentage of cases in which skin-to-skin contact was established

Table 12: Association between practice of skin-to-skin contact and time to start breastfeeding

Time to start breastfeeding												
		NOT STARTED	< 1 HRS	1-3 HRS	3-6 HRS	6-12 HRS	12-24 HRS	> 24 HRS	> 72 HRS	TOTAL	CHI SQUARE	P-VALUE
S-T-S CONTACT	N	1	2	4	12	16	24	26	1	86	23.438	0.001
	Y	0	0	4	2	0	1	1	1	9		

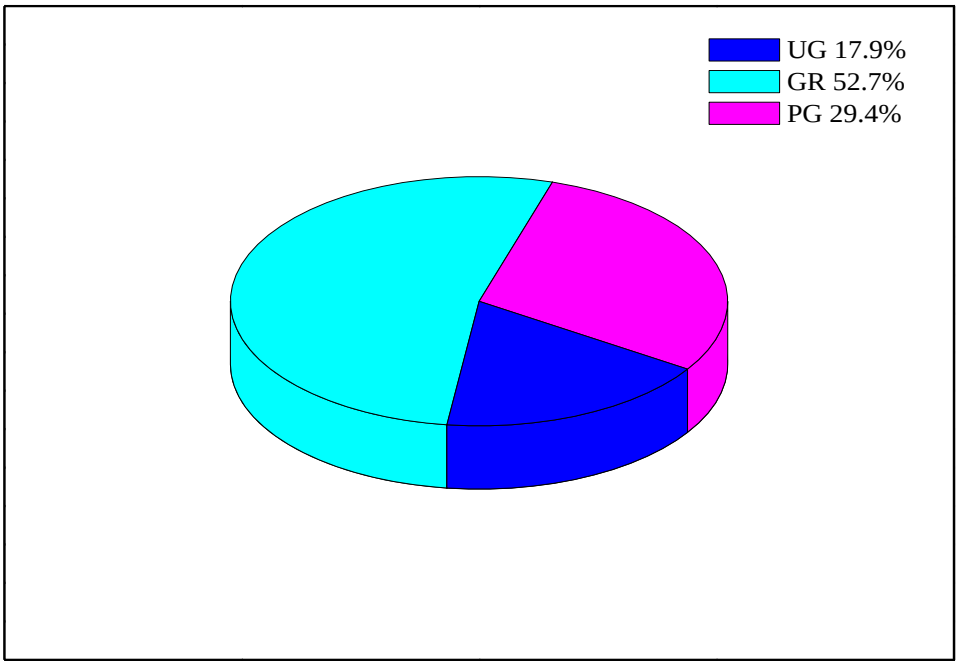

Figure 26: A plot of qualifications of the mothers of neonates involved in present study. UG, GR and PG represent under graduate, graduate and post graduate qualification, respectively.

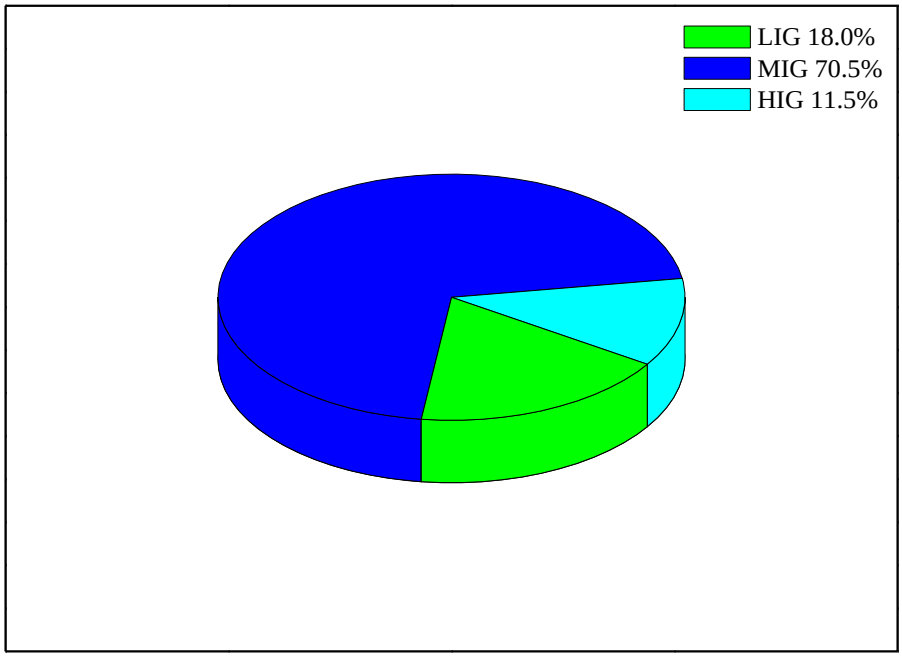

Figure 27: A plot of family income status of the mothers of neonates involved in present study. LIG, MIG and HIG represent low-income, middle-income and high-income group, respectively.

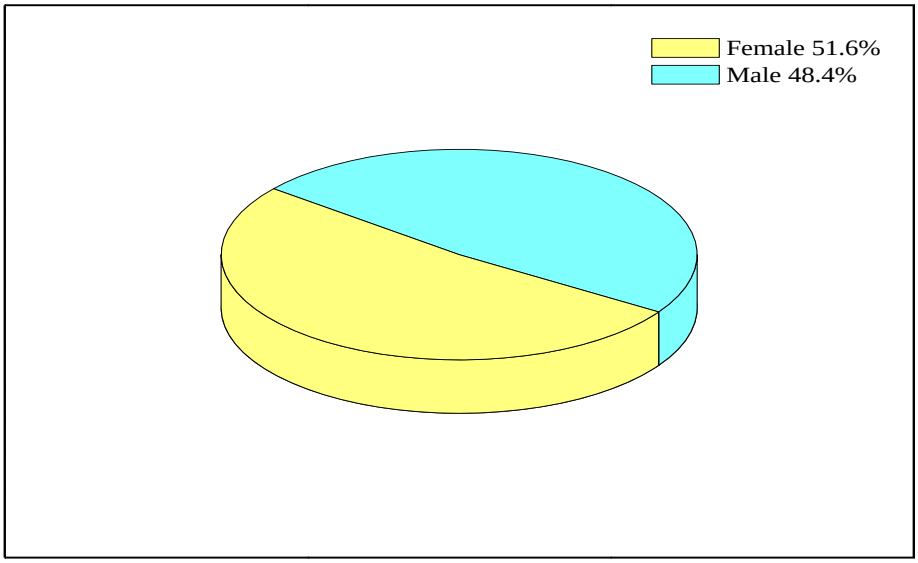

Figure 28: Gender distribution of neonates involved in present study.

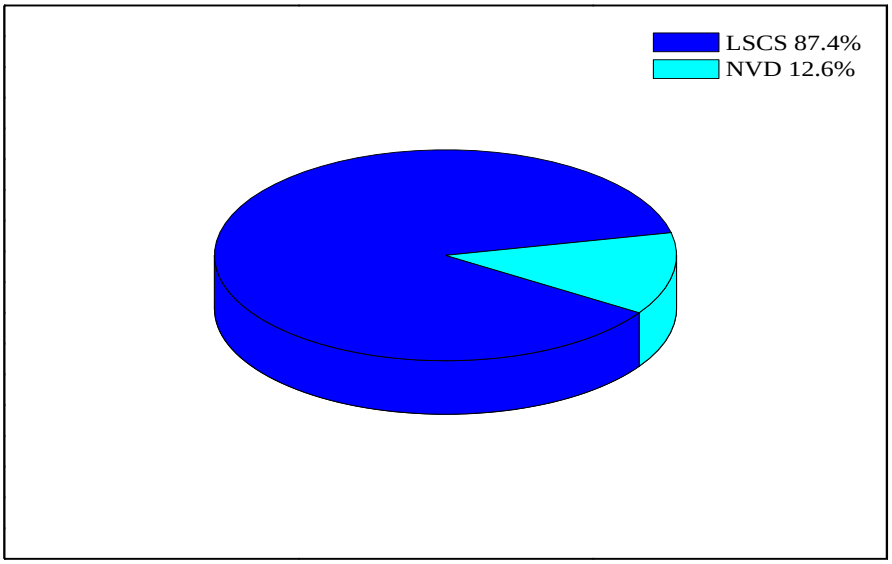

Figure 29: A distribution of mode of delivery of neonates considered in present study.

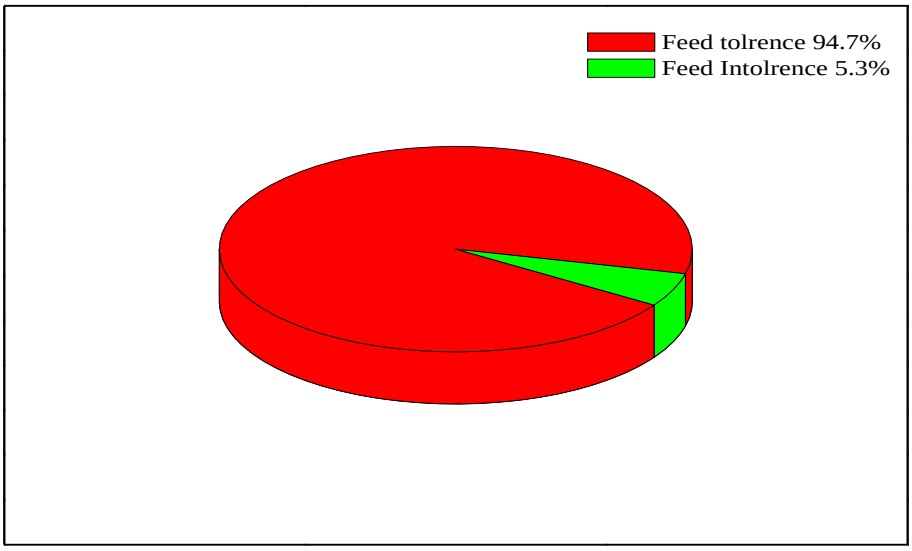

Figure 30: A distribution of tolerance of neonates to their mothers feed involved in present study.

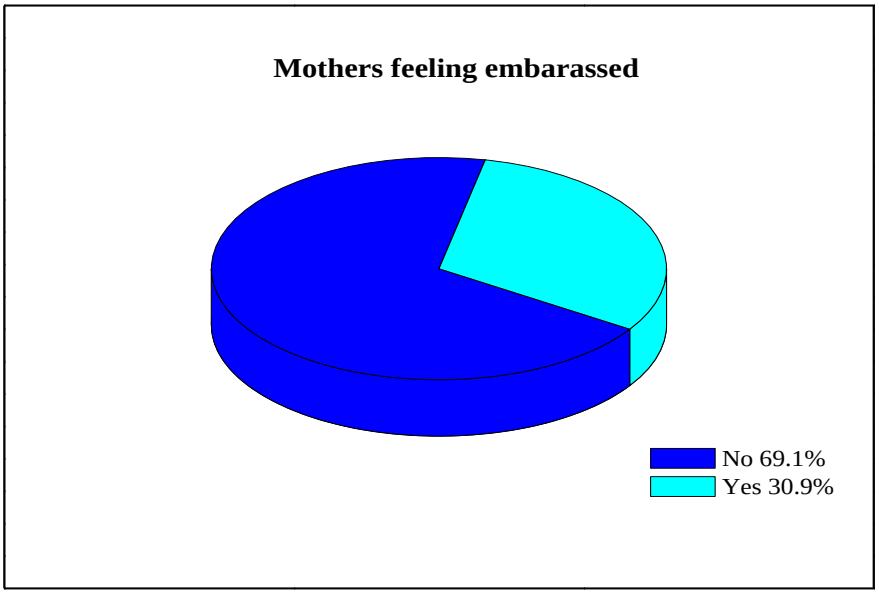

Figure 31: A plot indicating percentage of mothers feeling embarrassed.

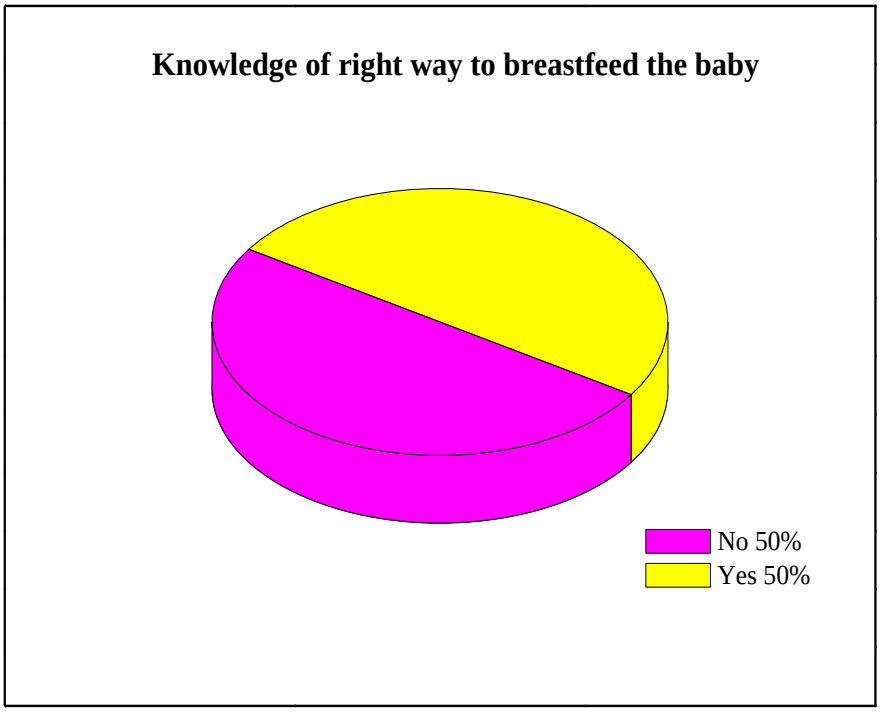

Figure 32: A plot indicating percentage of mothers having knowledge of proper way to breastfeed the baby

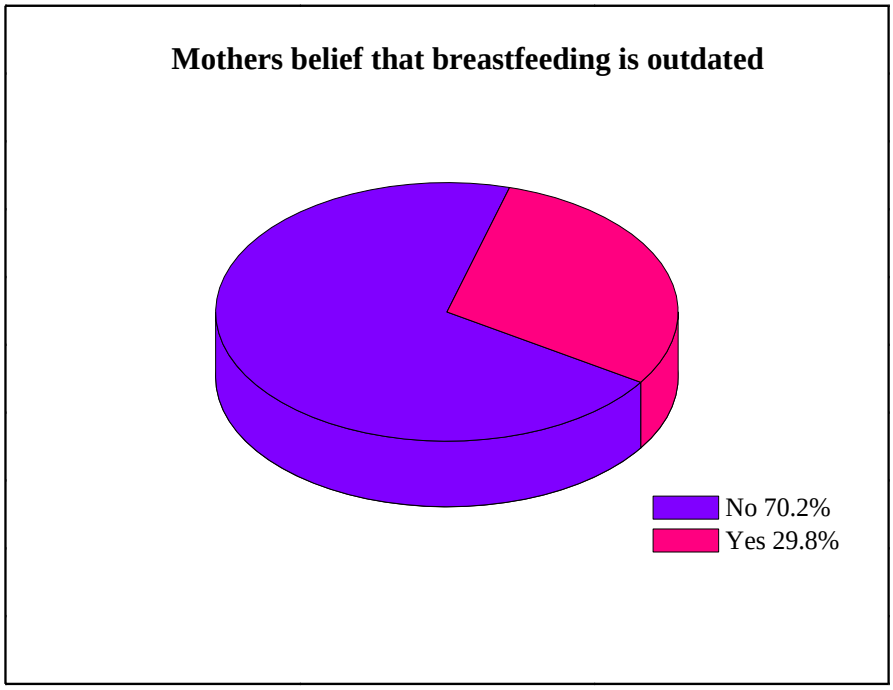

Figure 33: A plot indicating percentage of mothers having belief that breastfeeding is outdated.

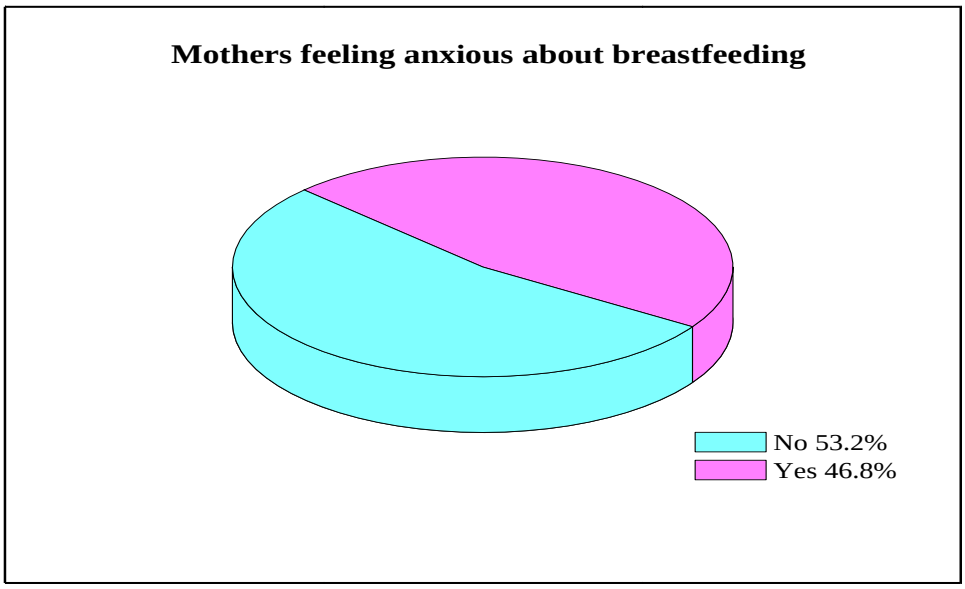

Figure 34: A plot indicating percentage of mothers feeling anxious about breastfeeding.

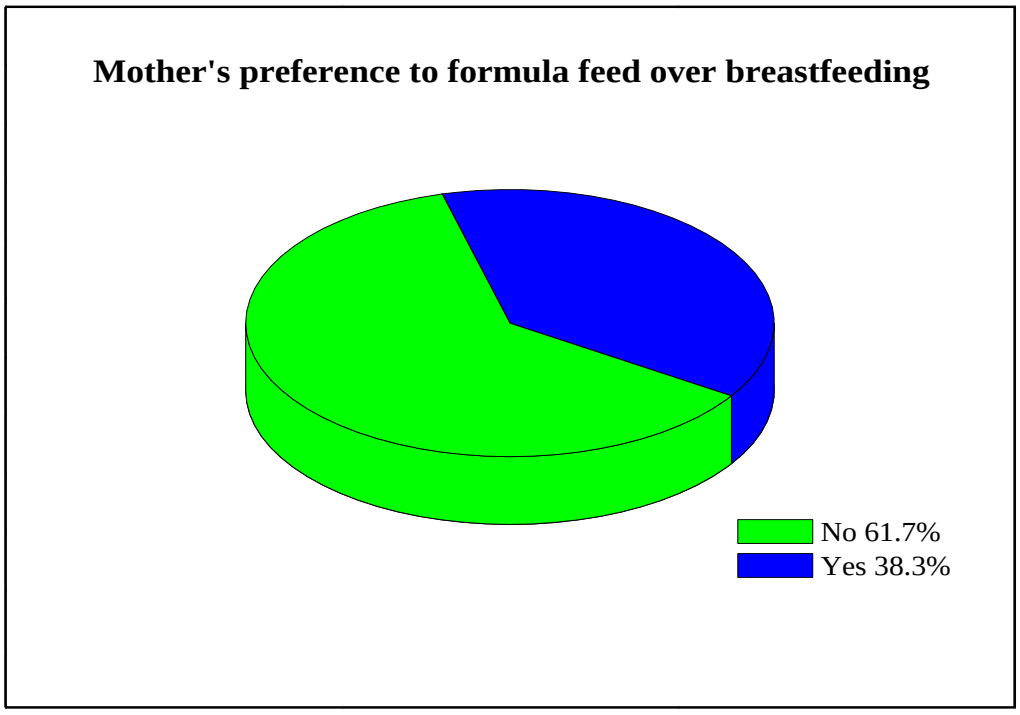

Figure 35: A plot indicating percentage of mothers having preference to formula feed over breastfeeding.

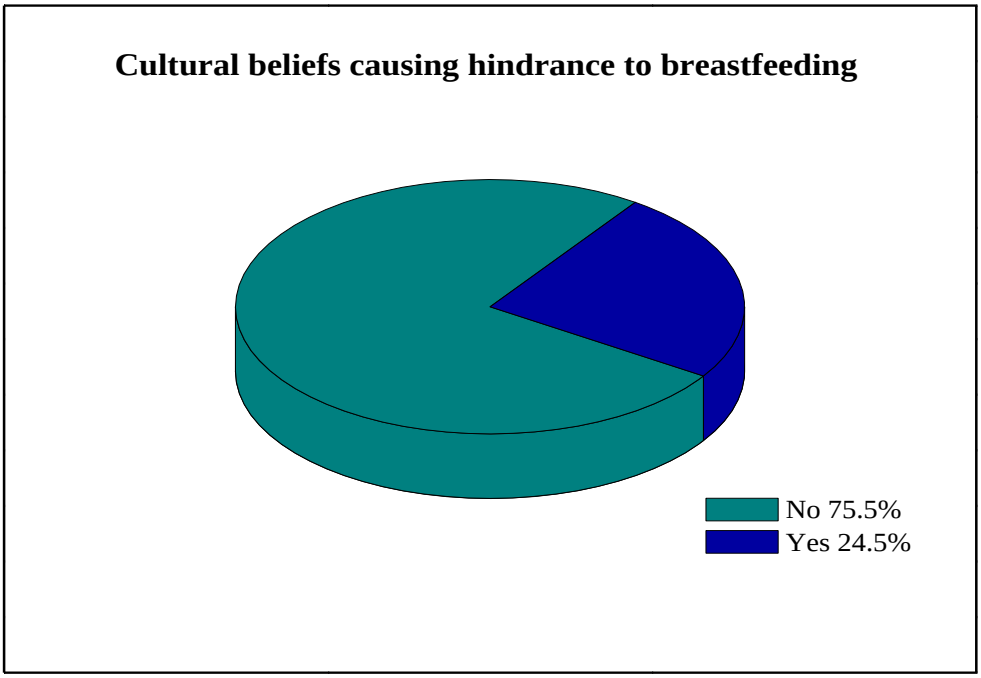

Figure 36: A plot indicating percentage of families having cultural beliefs causing hindrance to breastfeeding.

Phase 2: February 2023-October 2023 Results involving sequential PDSA cycles

PDSA-1

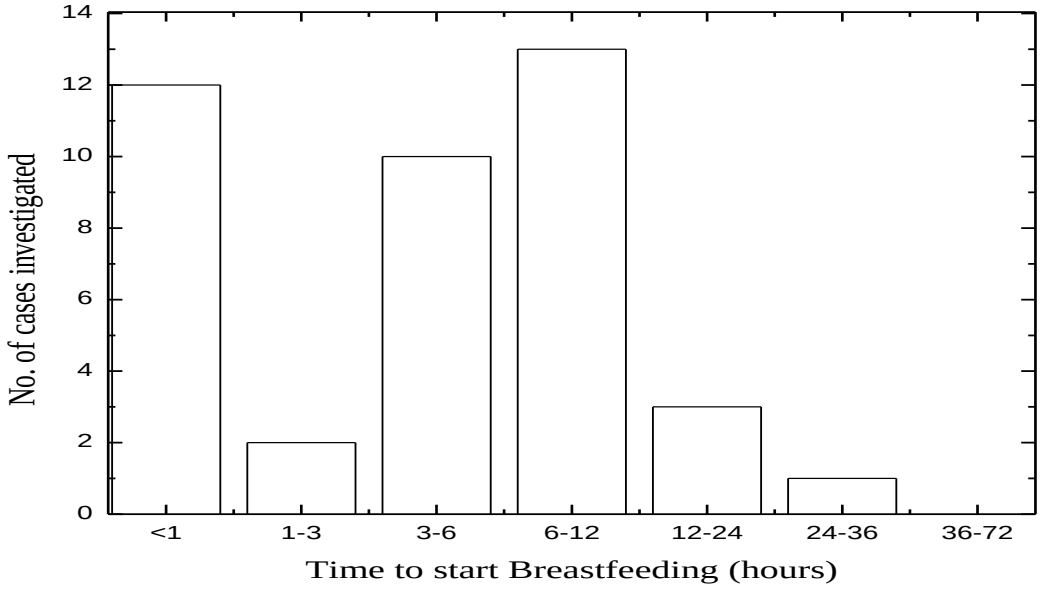

Figure 37: Time distribution of time to start breastfeeding

Table 13: Frequency table of time to start breastfeeding in newborns in PDSA-1

Time to start Breast Feeding (hours)	No. of cases investigated	% age
<1	12	29.3
1-3	2	4.9
3-6	10	24.4
6-12	13	31.7
12-24	3	7.3
24-36	1	2.4
36-72	-	-
>72	-	-
Not Started (NS)	-	

After analysing the data in baseline study, QI team was formulated and several quality initiatives were undertaken. After the quality initiatives were implied, data was collected and audited which revealed the time of EIBF improved to about 34.2%.

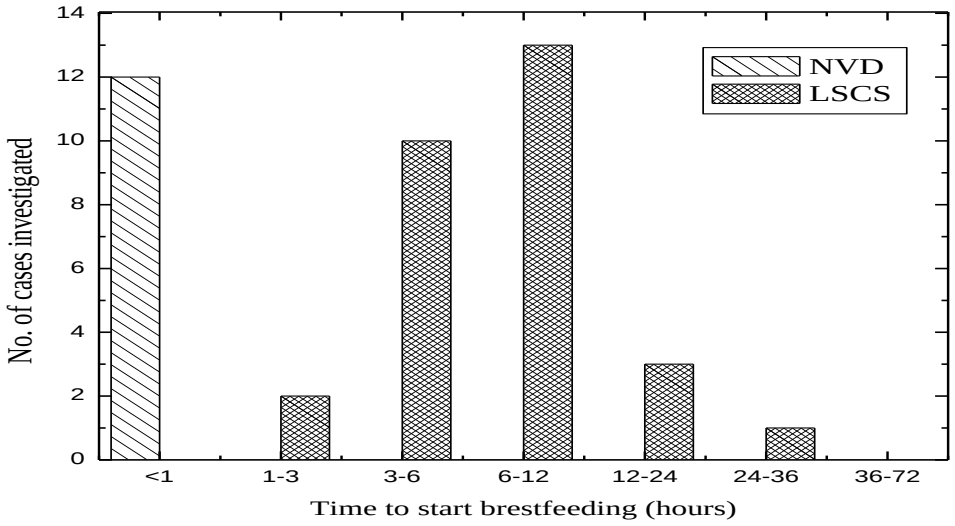

Figure 38: A comparison of time to start breastfeeding and mode of delivery

Table 14: Frequency table of comparison of time to start breastfeeding in those born by NVD and LSCS in PDSA-1

Time to start Breast Feeding (hours)	No. of cases of NVD	%age	No. of cases of LSCS	%age
<1	12	29.3	-	-
1-3	-	-	2	4.9
3-6	-	-	10	24.4
6-12	-	-	13	31.7
12-24	-	-	3	7.3
24-36	-	-	1	2.4
36-72	-	-	-	-
>72		-	-	-
Not Started (NS)			-	

This plot (Fig. 38) gives a time distribution with respect to mode of delivery. 100% newborns born by normal vaginal delivery were breastfed within one hour of life while only 6.8% of those born by LSCS.

PDSA 2

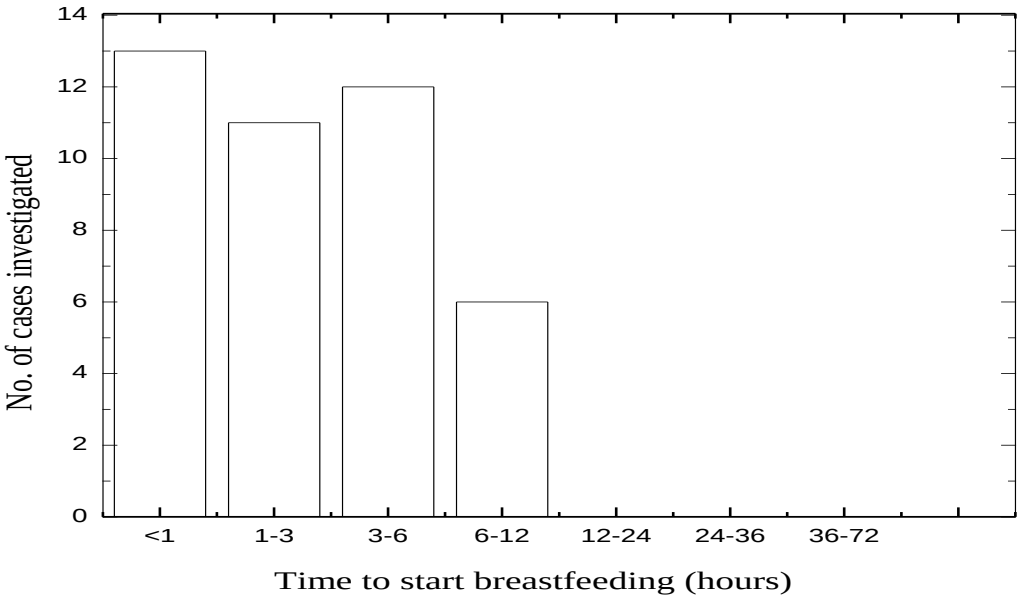

Figure 39: Typical time distribution of time to start breastfeeding of neonates.

Table 15: Frequency table of time to start breastfeeding in newborns in PDSA -2

Time to start Breast Feeding (hours)	No. of cases investigated	% age
<1	13	31
1-3	11	26.2
3-6	12	28.6
6-12	6	14.3
12-24	0	-
24-36	0	-
36-72	0	-
>72	0	-
Not Started (NS)	0	

In next PDSA cycle, rates of EIBF improved to 57.2% from 34.2% after reinforcing quality initiatives.

Table 16: Frequency table of comparison of time to start breastfeeding in newborns those born by NVD and LSCS in PDSA-2

Time to start Breast Feeding (hours)	No. of cases of NVD	%age	No. of cases of LSCS	%age
<1	13	31	0	-
1-3	1	2.4	10	23.8
3-6	0	-	12	28.6
6-12	0	-	6	14.3
12-24	0	--	0	-
24-36	0	-	0	-
36-72	0	-	0	-
>72	0	-	0	-
Not Started (NS)	0		0	

Following plot shows division of enrolled case on basis of mode of delivery. 33.4% of cases enrolled were delivered by normal vaginal delivery while 66.6% by caesarean section. The breastfeeding could be established within one hour of birth in 92.8% cases in those born byq2 vaginal deliveries but none in LSCS.

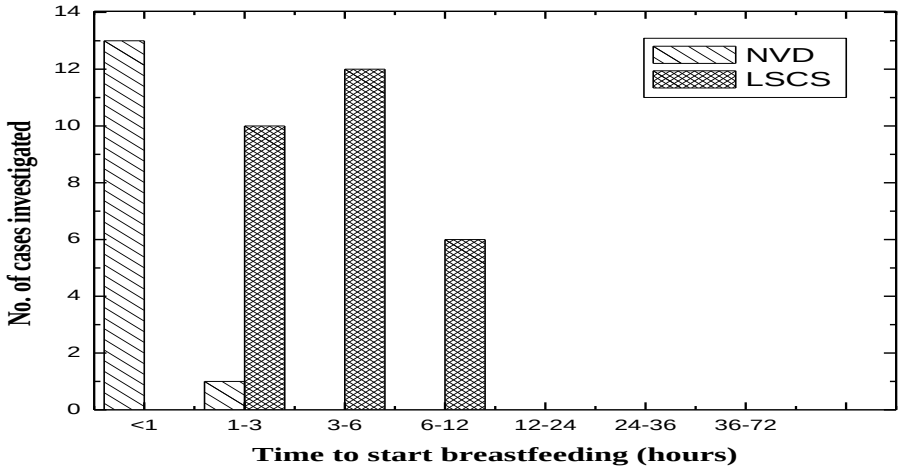

Figure 40: A comparison of time to start breastfeeding of neonates by normal delivery and C-section.

PDSA 3

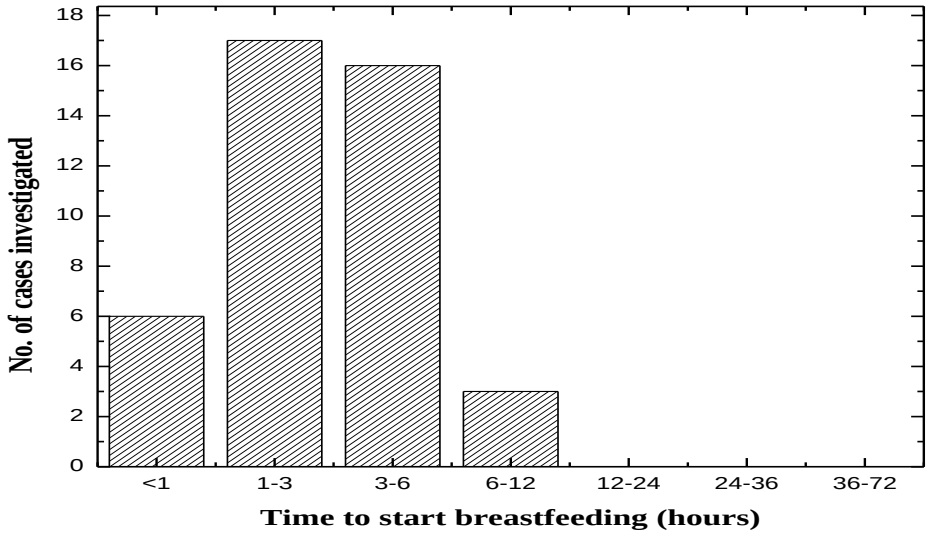

Figure 41: Typical distribution of time to start breastfeeding of neonates

Table 17: Frequency table of time to start breastfeeding in newborns in PDSA-3

Time to start Breast Feeding (hours)	No. of cases investigated	% age
<1	6	14.3
1-3	17	40.5
3-6	16	38.1
6-12	3	7.1
12-24	0	0
24-36	0	0
36-72	0	0
>72	0	0
Not Started (NS)		

In this PDSA cycle, rates of early initiation of breastfeeding were found to be about 54.8%.

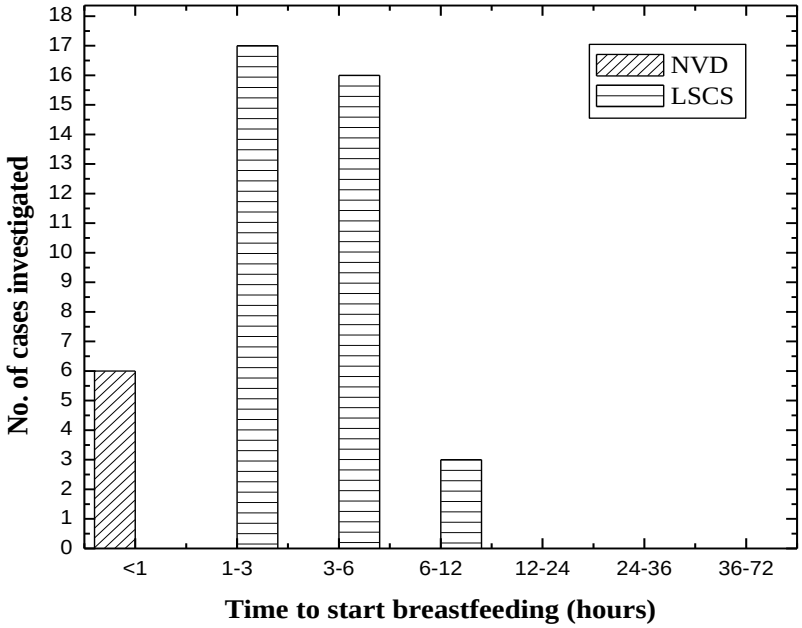

Figure 42: A comparison of time to start breastfeeding of neonates born by normal delivery and C-section

Table 18: Frequency table of comparison of time to start breastfeeding in newborns those born by NVD and LSCS in PDSA-3

Time to start Breast Feeding (hours)	No. of cases of NVD	%age	No. of cases of LSCS	%age
<1	6	14.3	0	0
1-3	0	0	17	40.5
3-6	0	0	16	38.1
6-12	0	0	3	7.1
12-24	0	0	0	0
24-36	0	0	0	0
36-72	0	0	0	0
>72	0	0	0	0
Not Started (NS)		0		0

In this cycle 14.3% babies were born by normal vaginal delivery and EIBF could be established in 100% of them. The rate of EIBF in those born by LSCS amounted to 40.5% however breastfeeding in the first hour couldn't be established in any of the babies.

PDSA 4

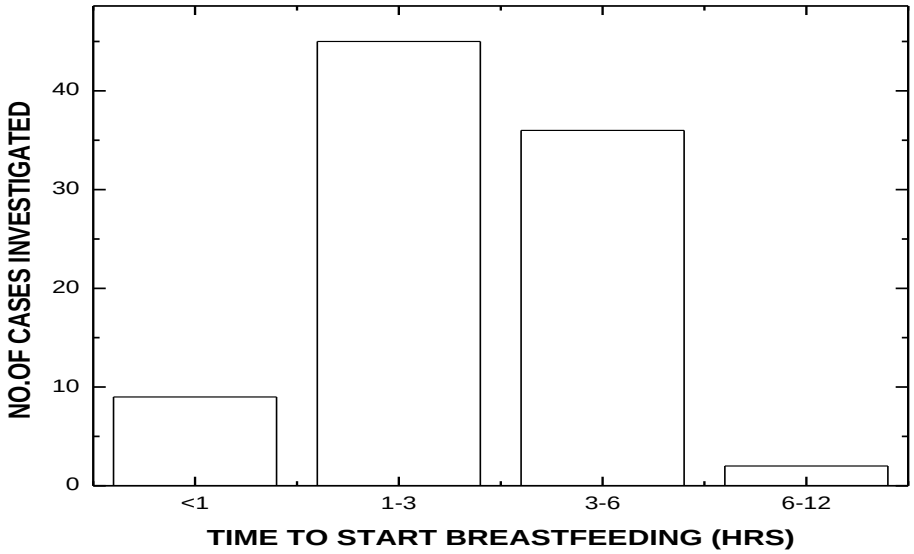

Figure 43: Typical distribution of time to start breastfeeding of neonates

Table 19: Frequency table of time to start breastfeeding in newborns PDSA-4.

Time to start Breast Feeding (hours)	No. of cases investigated	% age
<1	9	9.8
1-3	45	48.9
3-6	36	39.1
6-12	2	2.2
12-24	-	
24-36	-	
36-72	-	
>72	-	
Not Started (NS)	-	

In this PDSA cycle, EIBF was observed in 58.7% cases.

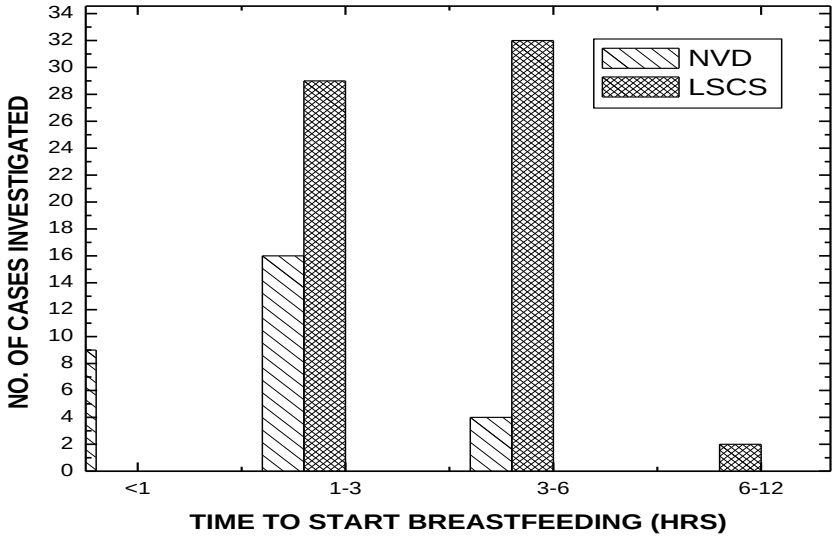

Figure 44: A comparison of time to start breastfeeding of neonates born by normal delivery and C-section

Table 20: Frequency table of comparison of time to start breastfeeding in newborns those born by NVD and LSCS in PDSA-4

Time to start Breast Feeding (hours)	No. of cases of NVD	%age	No. of cases of LSCS	%age
<1	9	9	1	1
1-3	18	18	29	29
3-6	4	4	36	36
6-12	-	-	2	2
12-24	-	-	-	-
24-36	-	-	-	-
36-72	-	-	-	-
>72	-	-	-	-
Not Started (NS)	-	-	-	-

The above plot gives a time distribution with respect to mode of delivery. 31% newborns were born by normal vaginal delivery and 69% by LSCS. Out of all those born by NVD, 87% could establish EIBF while 44% in case of LSCS.

Comparison between data collected during Phase I and Phase II is presented below.

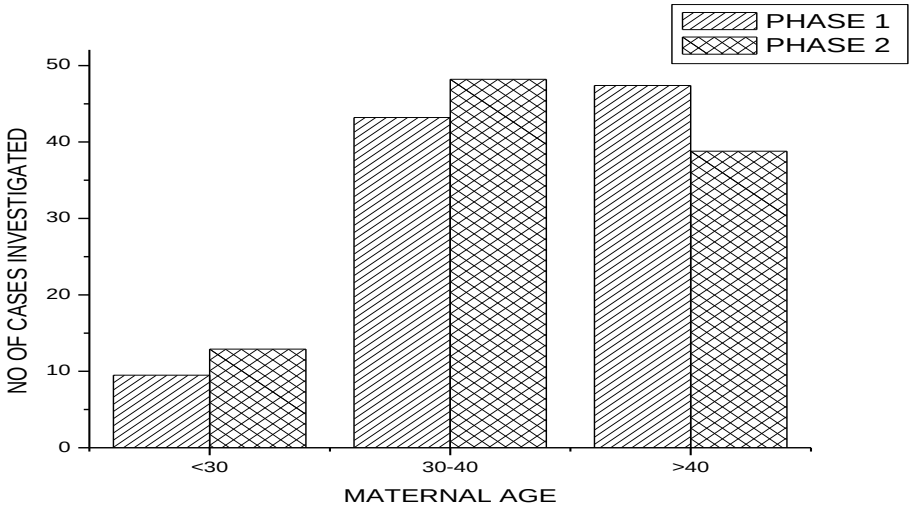

Figure 45: A comparison of maternal age of enrolled study groups in the two phases of the study

Table 21: Maternal age group comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
AGE GROUP	< 30	9	9.5%	29	12.9%	38	2.213	0.331
	31-40	41	43.2%	108	48.2%	149		
	> 40	45	47.4%	87	38.8%	132		
Total		95	100.0%	224	100.0%	319		

There was no significant difference in maternal age amongst the two study populations.

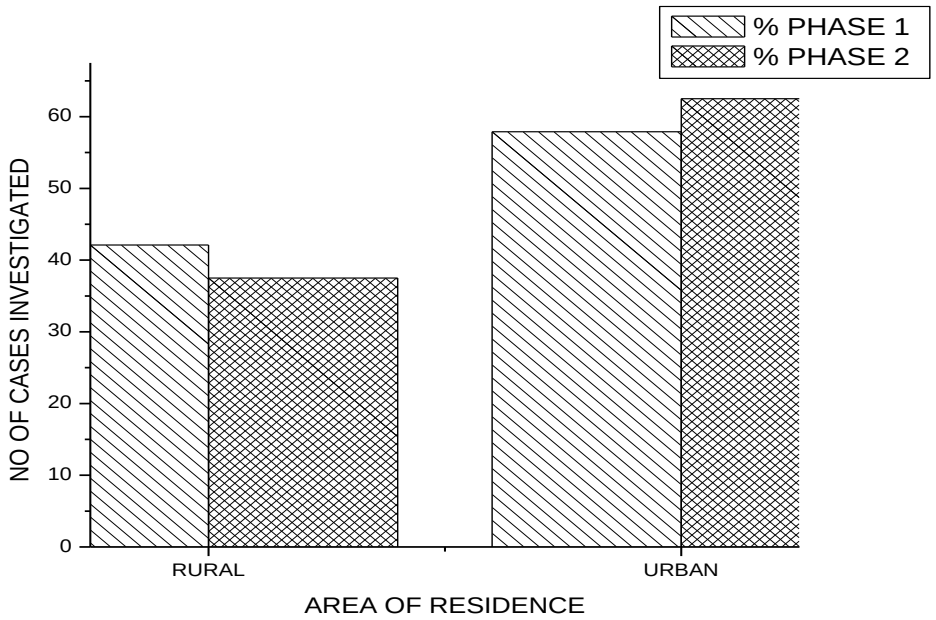

Figure 46: A comparison of area of residence of enrolled study population in two phases of study

Table 22: Area of residence comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
RURAL/URBAN	R	40	42.1%	84	37.5%	124	0.595	0.453
	U	55	57.9%	140	62.5%	195		
Total		95	100.0%	224	100.0%	319		

There was no significant difference in area of residence amongst the study populations selected in two phases.

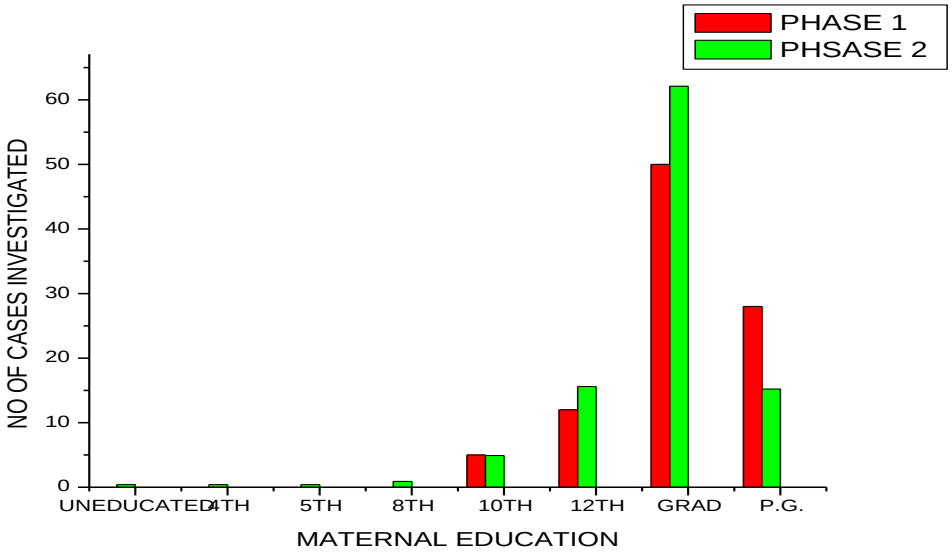

Figure 47: A comparison of maternal education of enrolled study population in two phases of study

Table 23: Maternal education comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
Education	10TH	5	5.3%	11	4.9%	16	10.556	0.159
	12TH	12	12.6%	35	15.6%	47		
	4TH	0	0.0%	1	0.4%	1		
	5TH	0	0.0%	1	0.4%	1		
	8TH	0	0.0%	2	0.9%	2		
	GRAD	50	52.6%	139	62.1%	189		
	P.G.	28	29.5%	34	15.2%	62		
	UNEDUCATED	0	0.0%	1	0.4%	1		
Total		95	100.0%	224	100.0%	319		

There was no significant difference in maternal education amongst the two study populations.

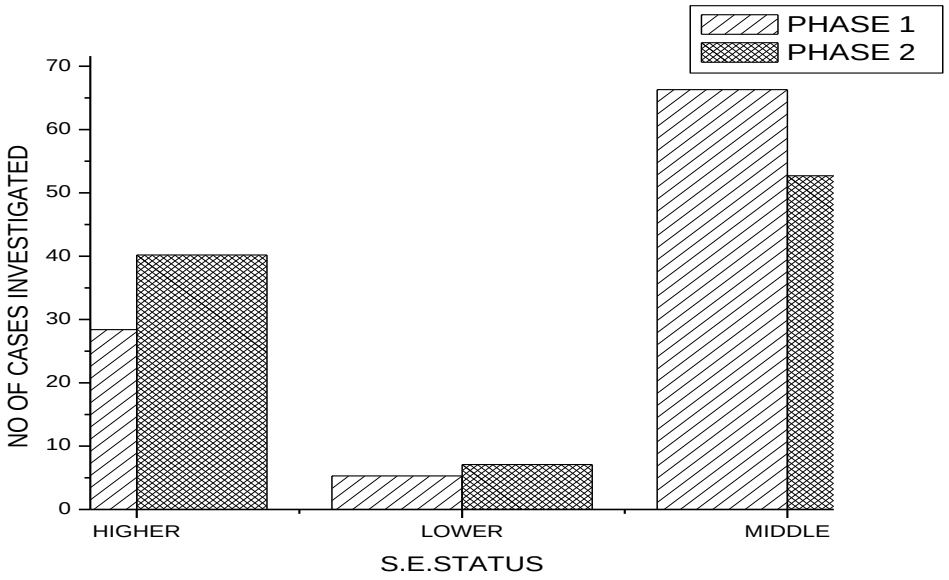

Figure 48: A comparison of socio-economic status of enrolled study population in two phases of study

Table 24: Maternal socio-economic status comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
S.E. STATUS	HIGH	27	28.4%	90	40.2%	117	7.913	0.048
	LOWER	5	5.3%	16	7.1%	21		
	MIDDLE	63	66.3%	118	52.7%	181		
Total		95	100.0%	224	100.0%	319		

There was a significant difference in the socio-economic strata of the two study populations.

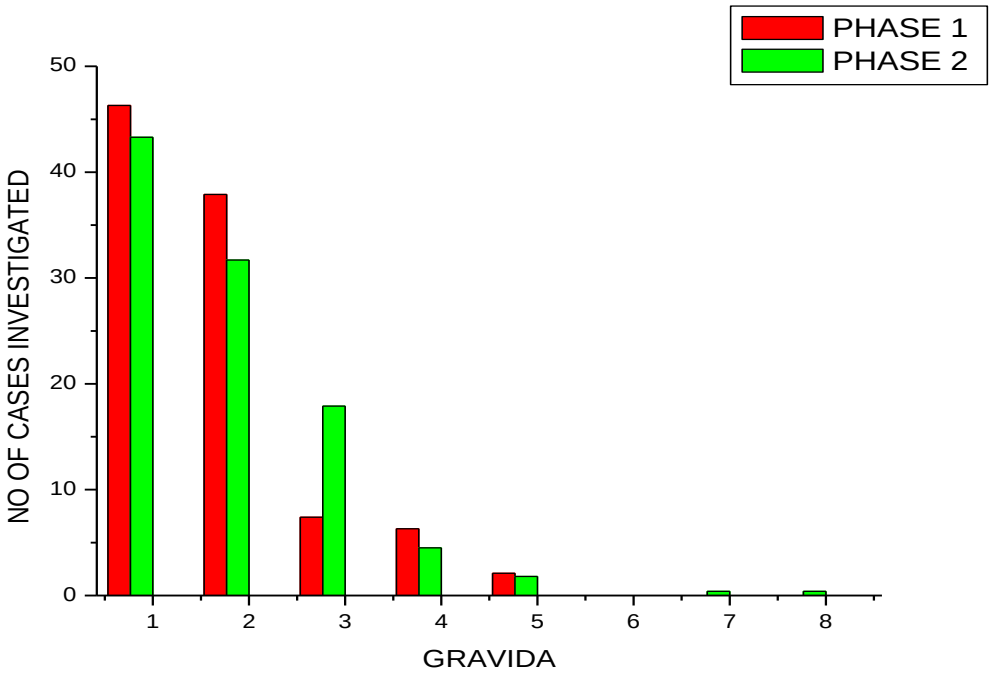

Figure 49: A comparison of gravidity of mothers of enrolled study population in two phases of study

Table 25: Maternal gravidity comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
GRAVIDA	1	44	46.3%	97	43.3%	141	7.222	0.301
	2	36	37.9%	71	31.7%	107		
	3	7	7.4%	40	17.9%	47		
	4	6	6.3%	10	4.5%	16		
	5	2	2.1%	4	1.8%	6		
	7	0	0.0%	1	0.4%	1		
	8	0	0.0%	1	0.4%	1		

There was no statistically significant difference in maternal gravidity amongst the two study groups.

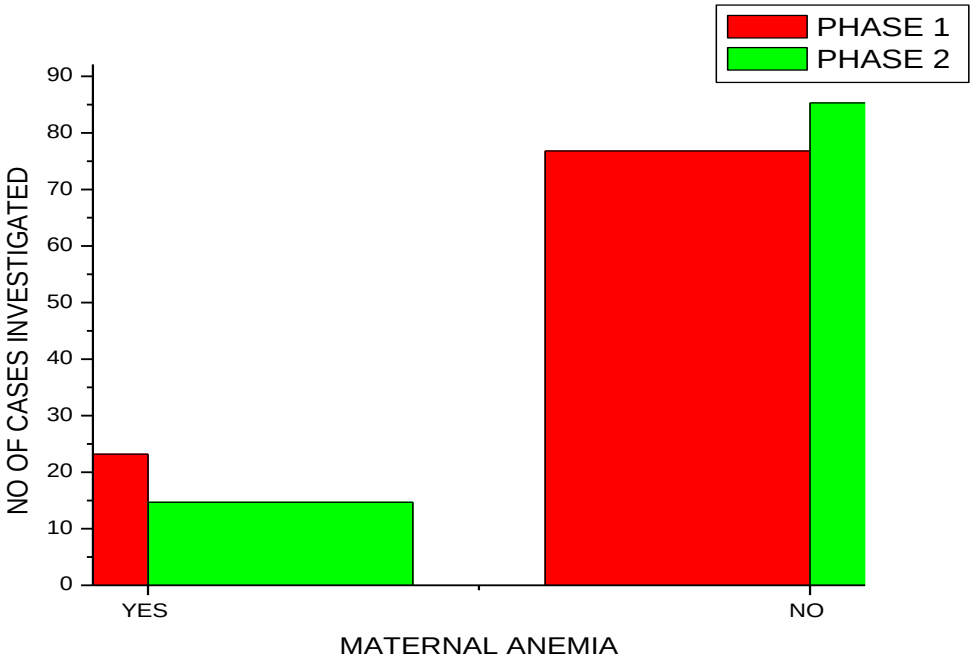

Figure 50: A comparison of prevalence of maternal anaemia of enrolled study population in two phases of study

Table 26: Maternal anaemia prevalence comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
ANEMIA	N	73	76.8%	191	85.3%	264	3.319	0.076
	Y	22	23.2%	33	14.7%	55		

There was no statistical difference in prevalence of maternal anaemia in the two study phases.

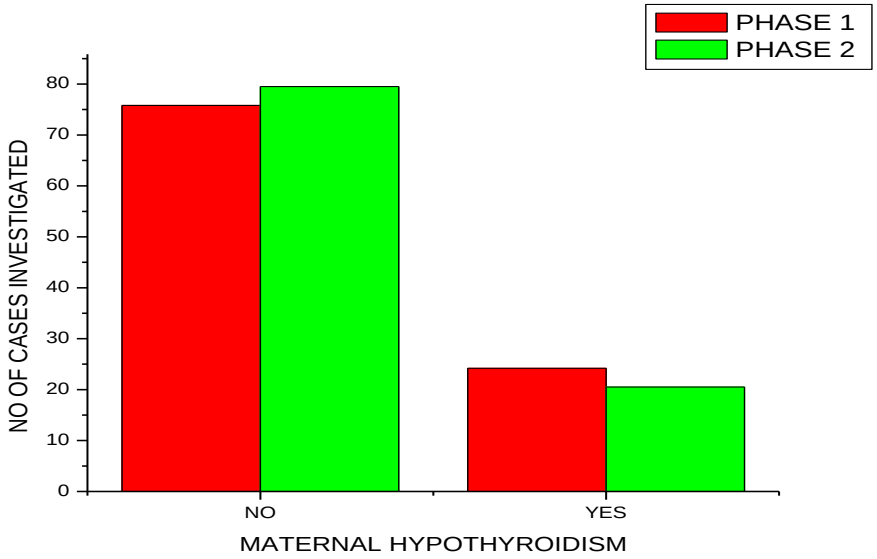

Figure 51: A comparison of prevalence of maternal hypothyroidism of enrolled study population in two phases of study

Table 27: Maternal hypothyroidism prevalence comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE	P-VALUE
Hypothyroidism	N	72	75.8%	178	79.5%	250	0.531	0.466
	Y	23	24.2%	46	20.5%	69		

There was no statistically significant difference in prevalence of maternal hypothyroidism among the two study populations.

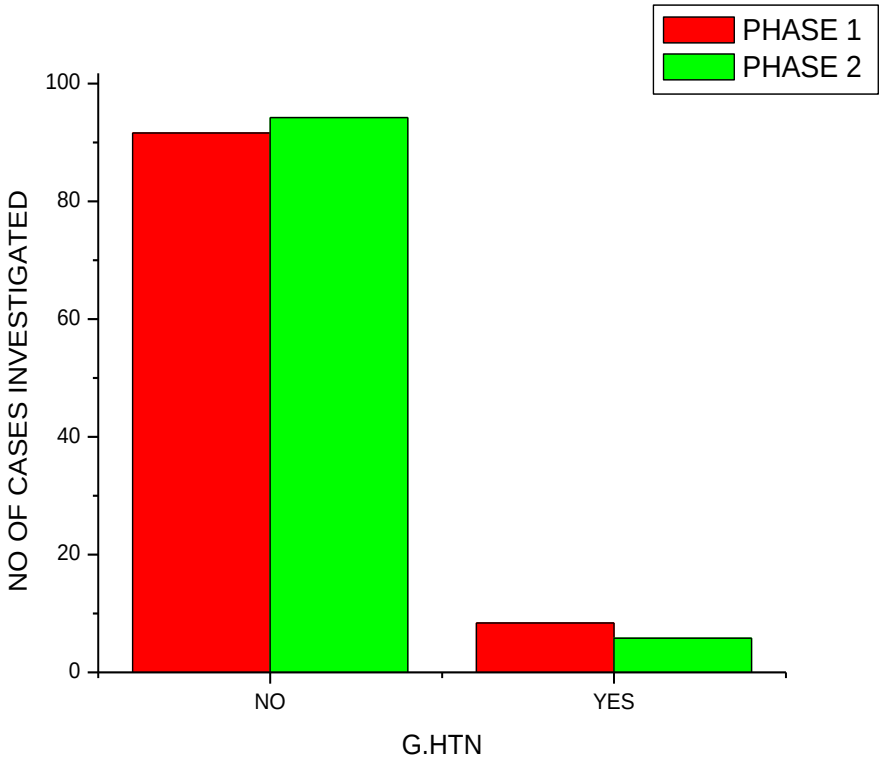

Figure 52: A comparison of prevalence of maternal gestational hypertension of enrolled study population in two phases of study

Table 28: Maternal gestational hypertension prevalence comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
G.HTN	N	87	91.6%	211	94.2%	298	0.743	0.389
	Y	8	8.4%	13	5.8%	21		

There was no statistical difference in prevalence of gestational hypertension in mothers enrolled in the two phases of study.

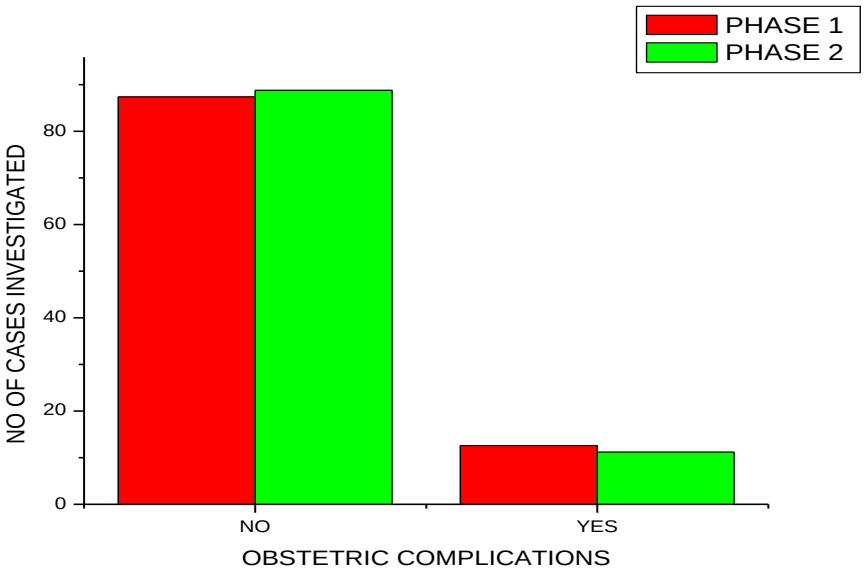

Figure 53: A comparison of prevalence of maternal obstetric complications of enrolled study population in two phases of study

Table 29: Maternal obstetric complications prevalence comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
OBS COMPLICATIONS	N	83	87.4%	199	88.8%	282	0.141	0.708
	Y	12	12.6%	25	11.2%	37		

There was no statistical difference in the prevalence of obstetric complications among the mothers enrolled in the two phases of the study.

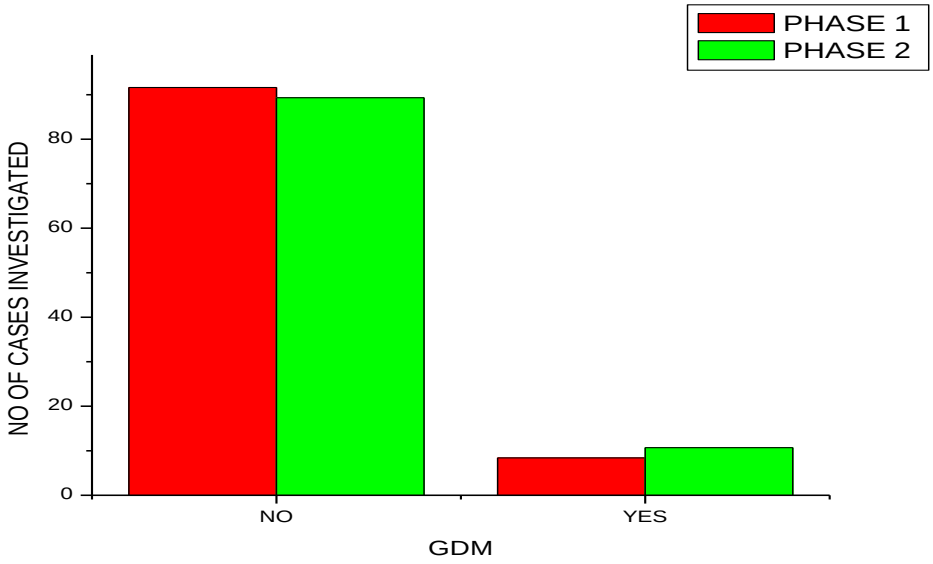

Figure 54: A comparison of prevalence of maternal gestational diabetes of enrolled study population in two phases of study

Table 30: Maternal gestational diabetes prevalence comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI-SQUARE VALUE	P-VALUE
GDM	N	87	91.6%	200	89.3%	287	0.389	0.533
	Y	8	8.4%	24	10.7%	32		

There was no significant difference in prevalence of gestational diabetes in the mothers of two study groups.

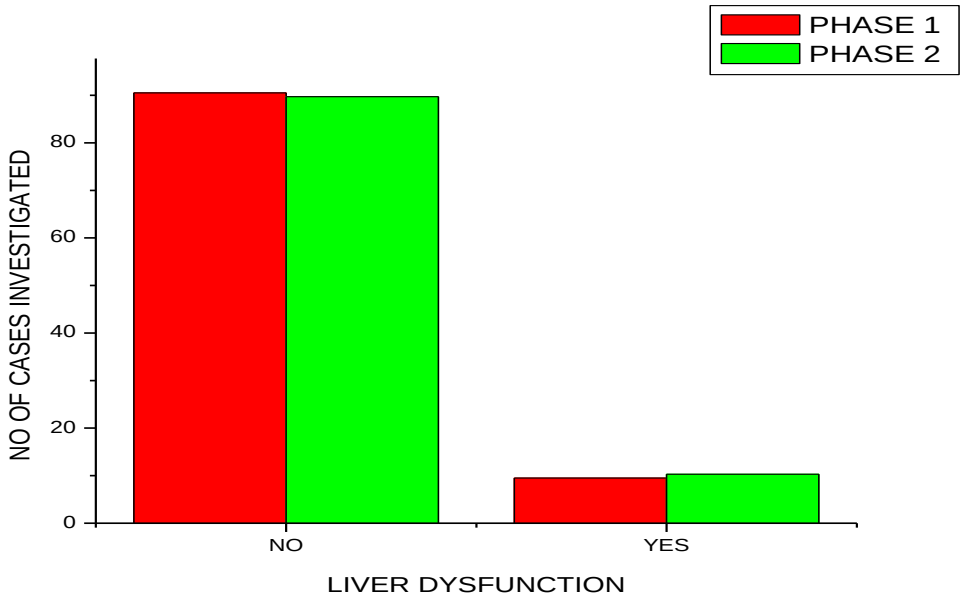

Figure 55: A comparison of prevalence of maternal liver dysfunction of enrolled study population in two phases of study

Table 31: Maternal liver dysfunction prevalence comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI-SQUARE VALUE	P-VALUE
LIVER DYSFUNCTION	N	86	90.5%	201	89.7%	287	0.047	0.829
	Y	9	9.5%	23	10.3%	32		

There was no statistically significant difference in the prevalence of liver dysfunction of mothers of two study groups.

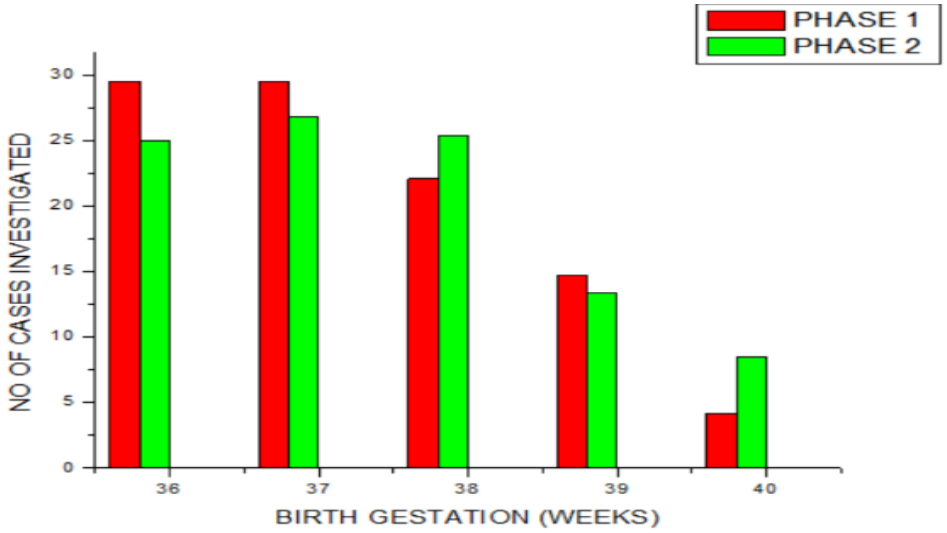

Figure 56: A comparison of birth gestation of enrolled study population in two phases of study

Table 32: Birth gestation comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
36 wks	N	67	70.5%	168	75.0%	235	0.688	0.407
	Y	28	29.5%	56	25.0%	84		
Total		95	100.0%	224	100.0%	319		
37 wks	N	67	70.5%	164	73.2%	231	0.241	0.681
	Y	28	29.5%	60	26.8%	88		
Total		95	100.0%	224	100.0%	319		
38wks	N	74	77.9%	167	74.6%	241	0.403	0.525
	Y	21	22.1%	57	25.4%	78		
Total		95	100.0%	224	100.0%	319		
39 wks	N	81	85.3%	194	86.6%	275	0.101	0.726
	Y	14	14.7%	30	13.4%	44		
Total		95	100.0%	224	100.0%	319		
40 wks	N	91	95.8%	205	91.5%	296	1.819	0.238
	Y	4	4.2%	19	8.5%	23		
Total		95	100.0%	224	100.0%	319		

There was no statistically significant difference in the birth gestations of enrolled neonates in the two study groups of study.

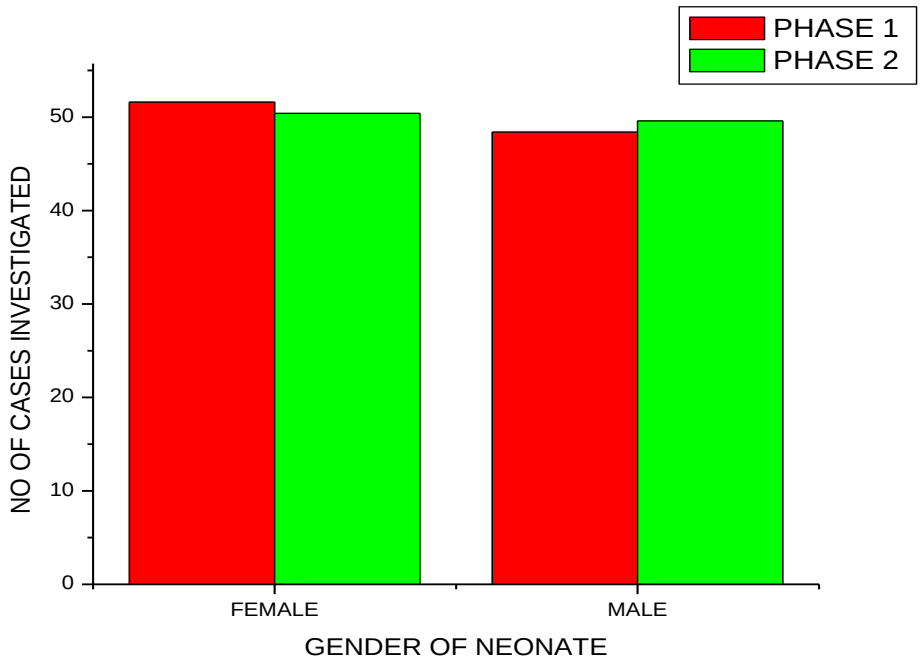

Figure 57: A comparison of gender of neonates of enrolled study population in two phases of study

Table 33: Newborn gender comparison in two phases of study

		PDSA 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
Gender	F	49	51.6%	113	50.4%	162	0.034	0.853
	M	46	48.4%	111	49.6%	157		
Total		95	100.0%	224	100.0%	319		

There was no significant difference found in the gender of neonates amongst the two phases of study.

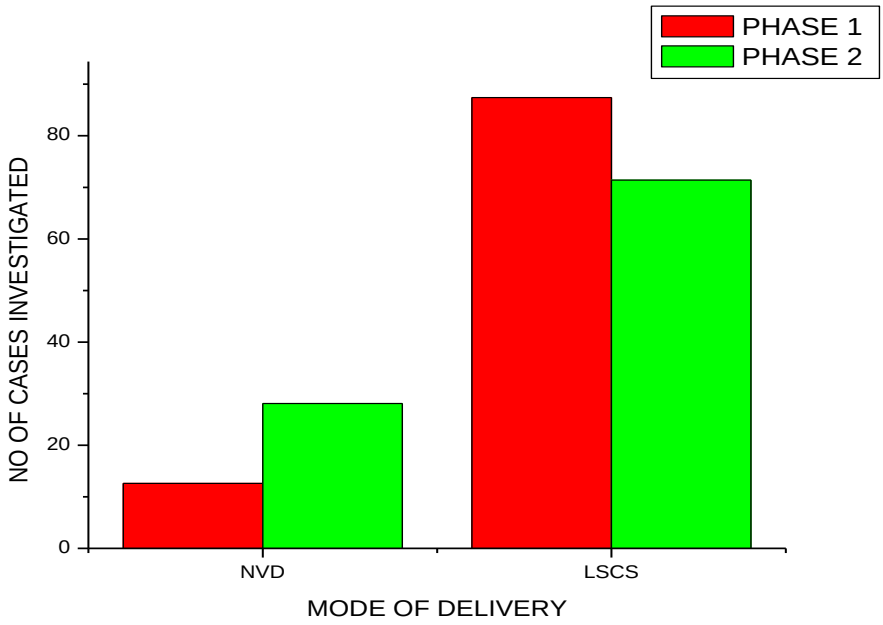

Figure 58: A comparison of mode of delivery of enrolled study population in two phases of study

Table 34: Mode of delivery comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
mode of delivery	LSCS	83	87.4%	160	71.4%	243	9.46	0.009
	LSCS(GA)	0	0.0%	1	0.4%	1		
	NVD	12	12.6%	63	28.1%	75		
Total		95	100.0%	224	100.0%	319		

There was a significant difference in the mode of delivery of neonates enrolled in the study in two phases.

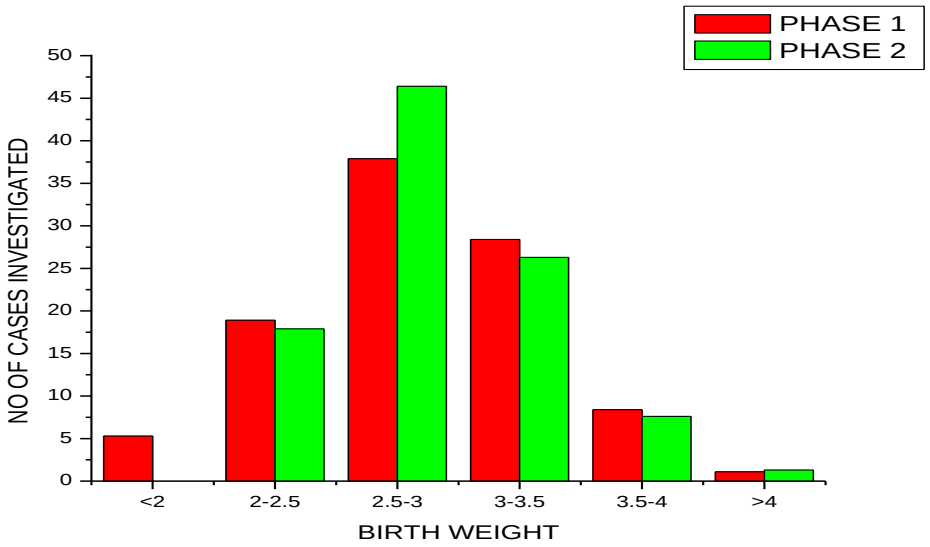

Figure 59: A comparison of birth weight of neonates of enrolled study population in two phases of study

Table 35: Birth weight comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
Birth Weight	> 4	1	1.1%	3	1.3%	4	13.574	0.035
	< 2	5	5.3%	0	0.0%	5		
	2-2.4	18	18.9%	40	17.9%	58		
	2.5-2.9	36	37.9%	104	46.4%	140		
	3-3.4	27	28.4%	59	26.3%	86		
	3.5-3.9	8	8.4%	17	7.6%	25		
	4-4.5	0	0.0%	1	0.4%	1		
Total		95	100.0%	224	100.0%	319		

There was a statistically significant difference in the birth weight of neonates enrolled in the two phases of study.

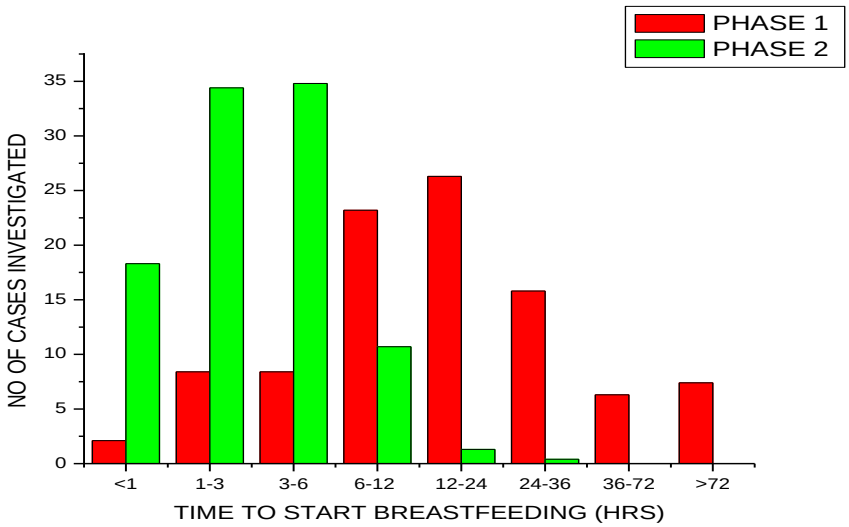

Figure 60: A comparison of time to start breastfeeding of enrolled study population in two phases of study

Table 36: Rates of EIBF comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
Time Of Starting Breast Feeds (Hr)	> 72 HR	7	7.4%	0	0.0%	7	168.347	0.001
	< 1 HR	2	2.1%	41	18.3%	43		
	1-3 HR	8	8.4%	77	34.4%	85		
	12-24 HR	25	26.3%	3	1.3%	28		
	24-36 HR	15	15.8%	1	0.4%	16		
	3-6 HR	8	8.4%	78	34.8%	86		
	36-72 HR	6	6.3%	0	0.0%	6		
	6-12 HR	22	23.2%	24	10.7%	46		
	NOT STARTED	2	2.1%	0	0.0%	2		
Total		95	100.0%	224	100.0%	319		

There was found to be a statistically significant improvement in the time to start breast feeding in the phase 2 of the study as compared to phase 1.

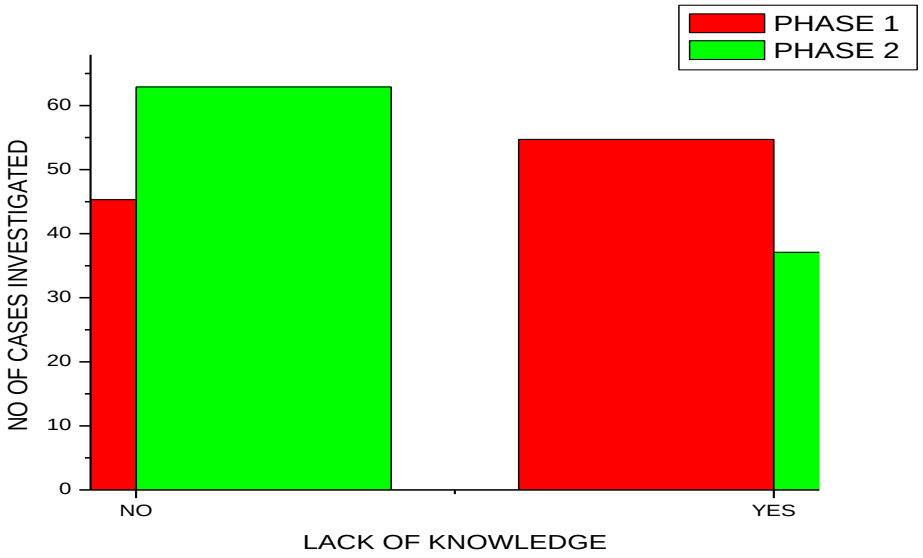

Figure 61: A comparison of prevalence of lack of knowledge of mothers of enrolled study population in two phases of study

Table 37: Lack of knowledge prevalence comparison in two phases of study

		PHASE 1		PHASE 2		Total	Chi-square value	p-value
		No. of cases	%age	No. of cases	%age			
LACK OF KNOWLEDGE	N	43	45.3%	141	62.9%	184	8.545	0.004
	Y	52	54.7%	83	37.1%	135		

There was a statistically significant difference in the knowledge of mothers interviewed which improved in the sequential phase of the study.

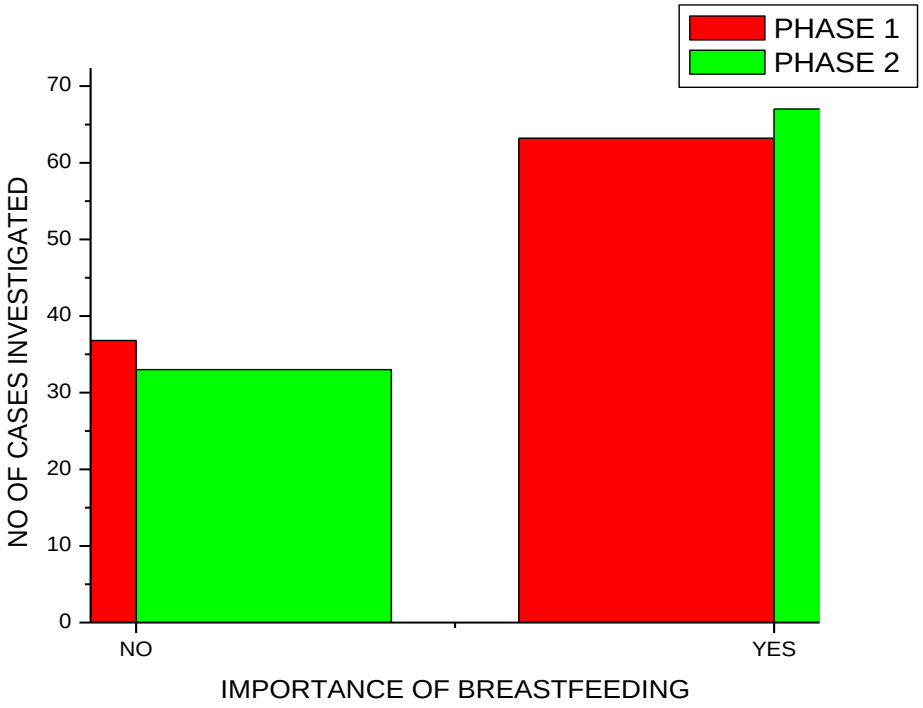

Figure 62: A comparison of prevalence of perception about breastfeeding practices of enrolled study population in two phases of study

Table 38: Perception of breastfeeding comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
IMP of BF	N	35	36.8%	74	33.0%	109	0.430	0.521
	Y	60	63.2%	150	67.0%	210		

There was no statistical difference in prevalence of perception about importance and breastfeeding practices in the two study phases.

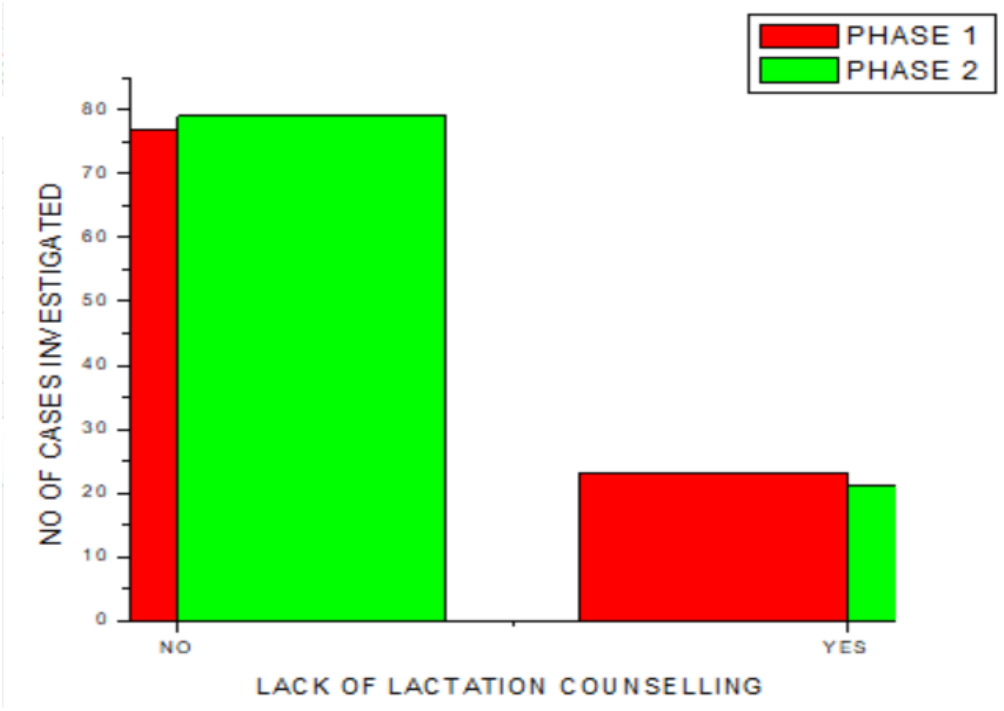

Figure 63: A comparison of prevalence of perception of lack of lactation counselling of mothers of enrolled study population in two phases of study

Table 39: Lack of lactation counselling comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
LACK OF LACTATION COUNSELLING	N	73	76.8%	177	79.0%	250	0.186	0.666
	Y	22	23.2%	47	21.0%	69		

There was no statistical difference in prevalence of lack of lactational counselling in the two study phases.

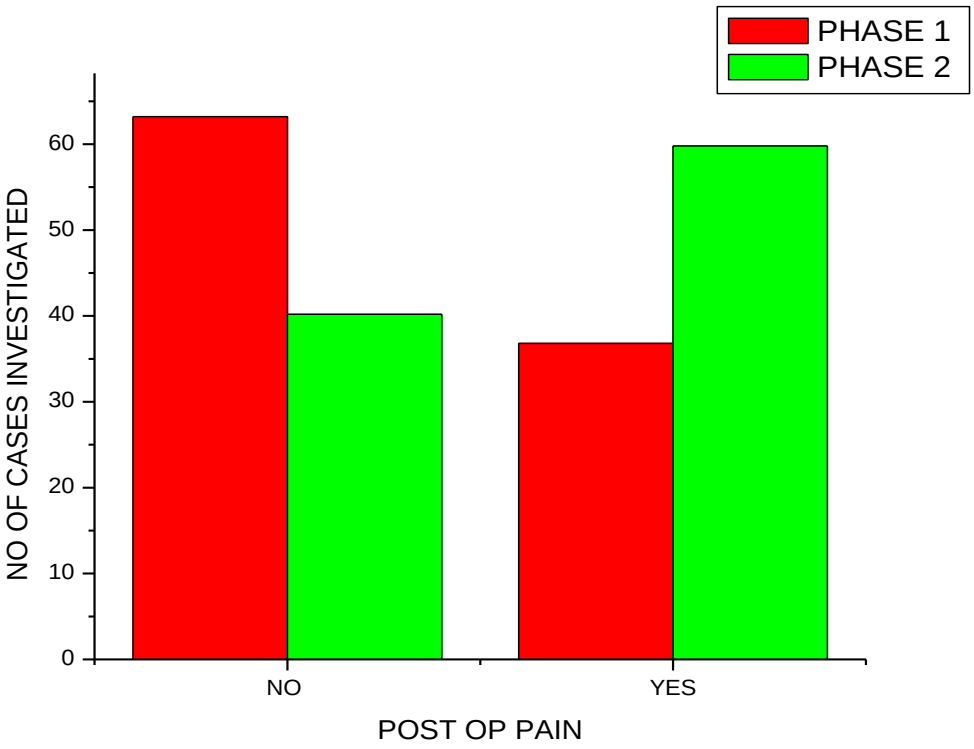

Figure 64: A comparison of prevalence of maternal post- operative pain of enrolled study population in two phases of study

Table 40: Post-operative pain in mothers: comparison in two phases of study

		Phase 1		Phase 2		TOTAL	CHI SQUARE VALUE	P-VALUE
POSTOP PAIN	N	60	63.2%	90	40.2%	150	14.140	0.001
	Y	35	36.8%	134	59.8%	169		

There was a statistically significant difference in prevalence of post op pain in the two study phases.

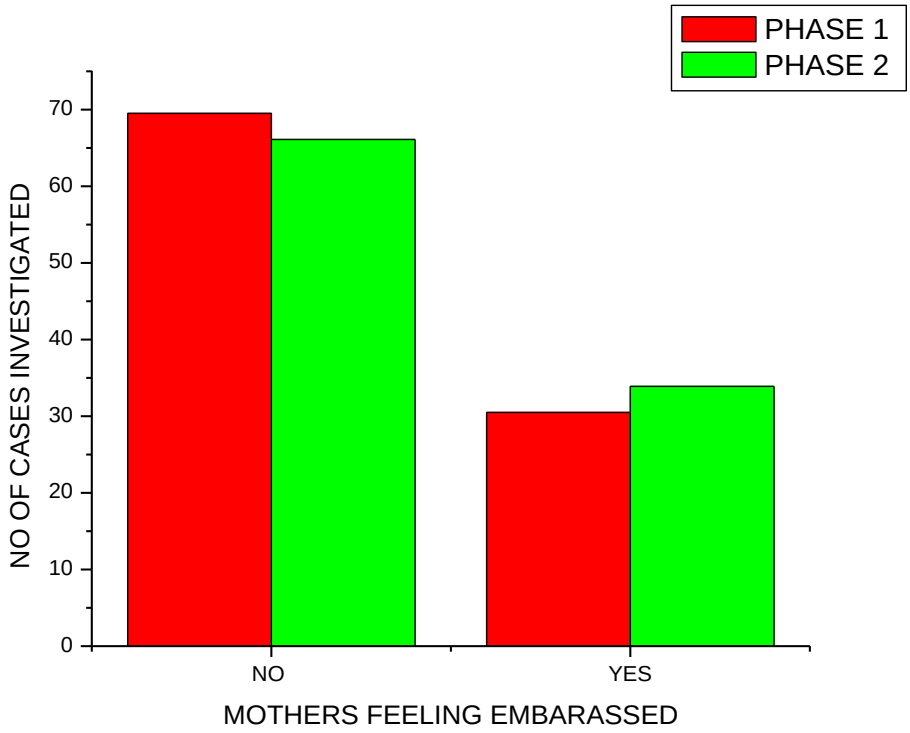

Figure 65: A comparison of prevalence of mothers feeling embarrassed in enrolled study population in two phases of study

Table 41: Mothers feeling embarrassed: comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
EMBARASSED	N	66	69.5%	148	66.1%	214	0.350	0.554
	Y	29	30.5%	76	33.9%	105		

There was no statistical difference in prevalence of mothers feeling embarrassed in the two study phases.

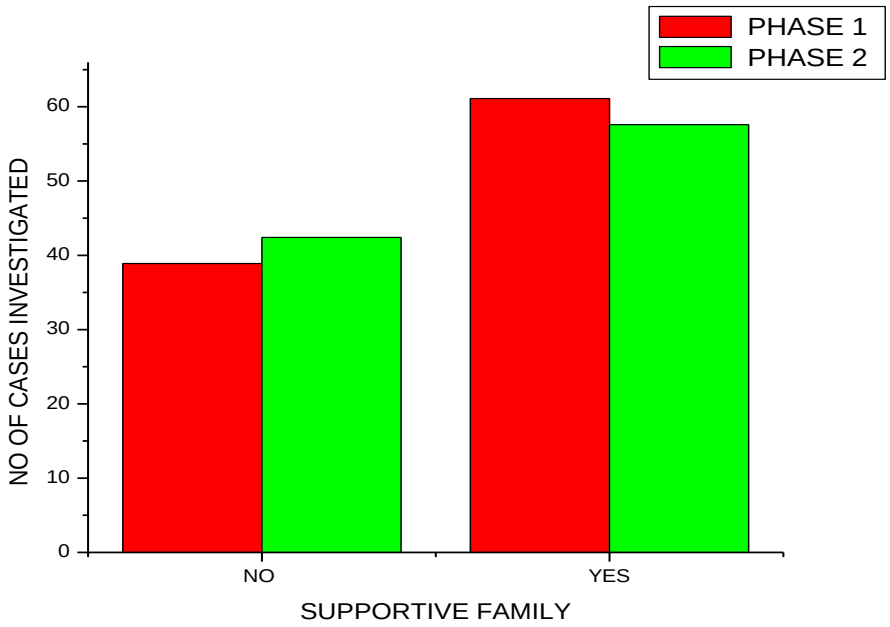

Figure 66: A comparison of prevalence of supportive families of mothers in enrolled study population in two phases of study

Table 42: Supportive family comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
SUPP. FAMILY	N	37	38.9%	95	42.4%	132	0.330	0.566
	Y	58	61.1%	129	57.6%	187		

There was no statistical difference in prevalence of supportive families in the two study phases.

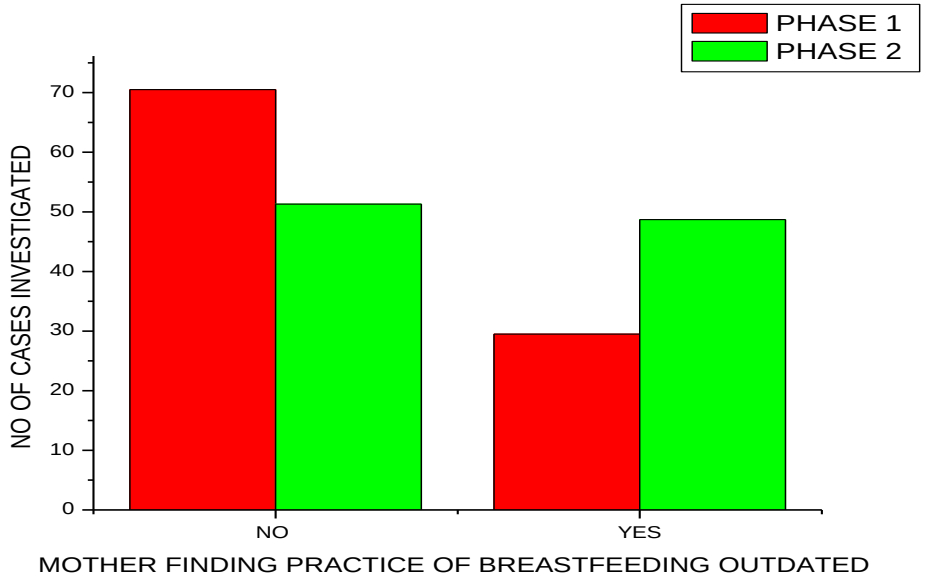

Figure 67: A comparison of prevalence of perception of mothers regarding practice of breastfeeding outdated in enrolled study population in two phases of study

Table 43: Mothers finding breastfeeding practice outdated comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
OUTDATED	N	67	70.5%	115	51.3%	182	10.023	0.002
	Y	28	29.5%	109	48.7%	137		

There was a statistically significant difference in prevalence of maternal perception regarding the breastfeeding practices being outdated in the two study phases.

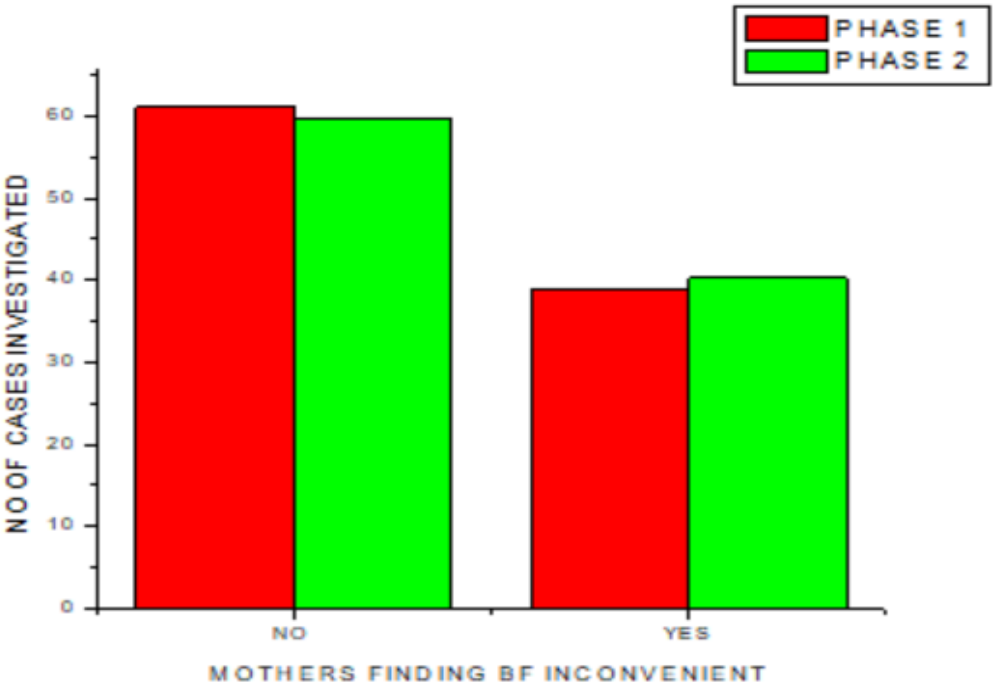

Figure 68: A comparison of prevalence of mothers finding practice of breastfeeding inconvenient in enrolled study population in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
INCONV BF	N	58	61.1%	134	59.8%	192	0.042	0.837
	Y	37	38.9%	90	40.2%	127		

Table 44: Mothers finding inconvenience at breastfeeding comparison in two phases of study

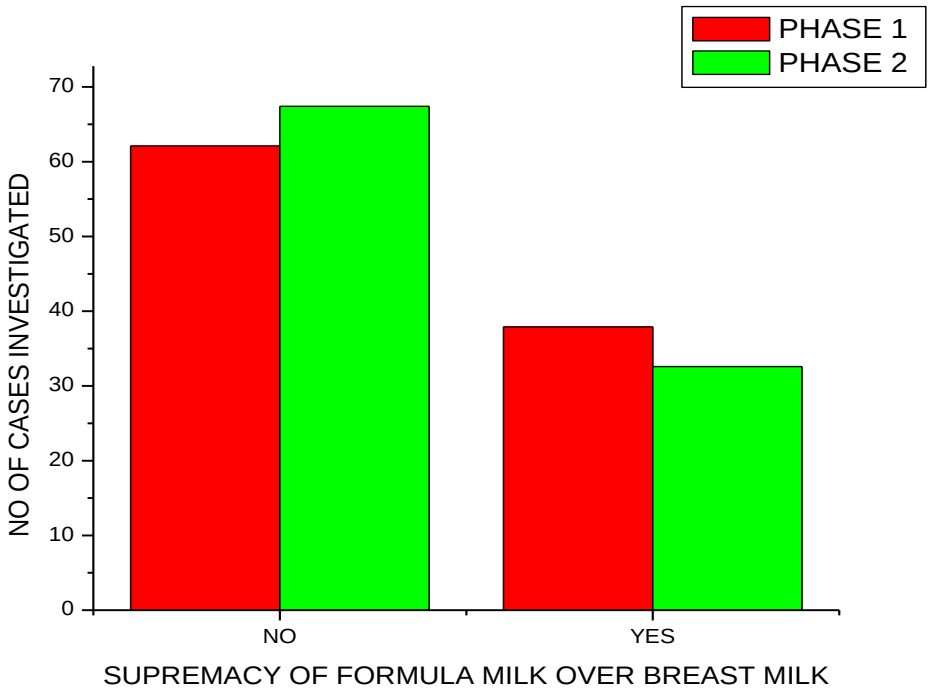

Figure 69: A comparison of prevalence of perception of mothers finding formula milk superior to breastmilk in enrolled study population in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
SUPREMACY OF FORMULA FEEDS	N	59	62.1%	151	67.4%	210	0.835	0.369
	Y	36	37.9%	73	32.6%	109		

Table 45: Mothers perception about the supremacy of formula milk over breastfeeding comparison in two phases of study

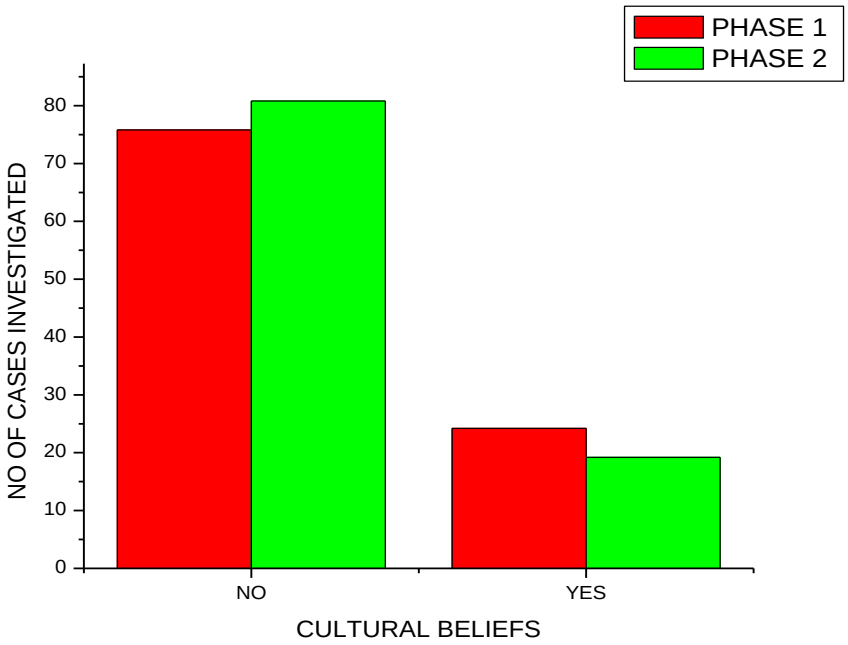

Figure 70: A comparison of prevalence of cultural beliefs of mothers in enrolled study population in two phases of study

Table 46: Prevalence of cultural beliefs comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
CULTURAL BELIEFS	N	72	75.8%	181	80.8%	253	1.022	0.312
	Y	23	24.2%	43	19.2%	66		

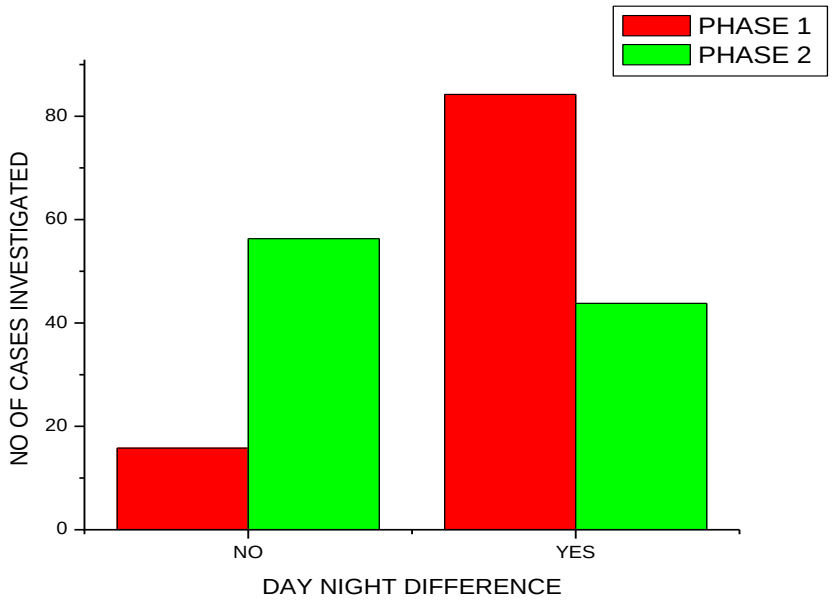

Figure 71: A comparison of prevalence of day night difference of lactation counselling in enrolled study population in two phases of study

Table 47: Presence of day-night shift comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
DAY- NIGHT DIFF	Y	80	84.2%	98	43.8%	178	44.278	0.001
	N	15	15.8%	126	56.3%	141		

There was found a significant difference in the breastfeeding practices during the day night shifts.

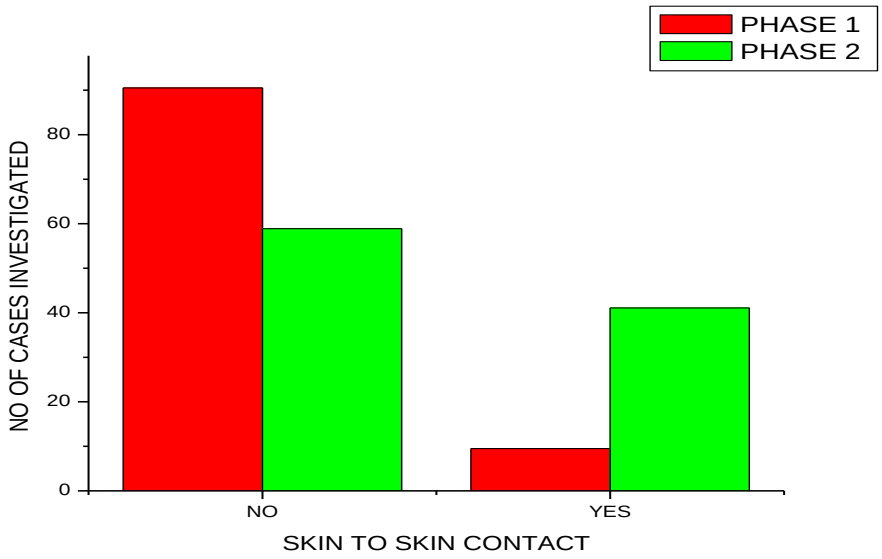

Figure 72: A comparison of establishment of skin-to-skin contact in enrolled study population in two phases of study

Table 48: Prevalence of STS contact comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
S-T-S CONTACT	N	86	90.5%	132	58.9%	218	30.820	0.001
	Y	9	9.5%	92	41.1%	101		

The practice of skin-to-skin contact improved significantly in sequential phases of the study.

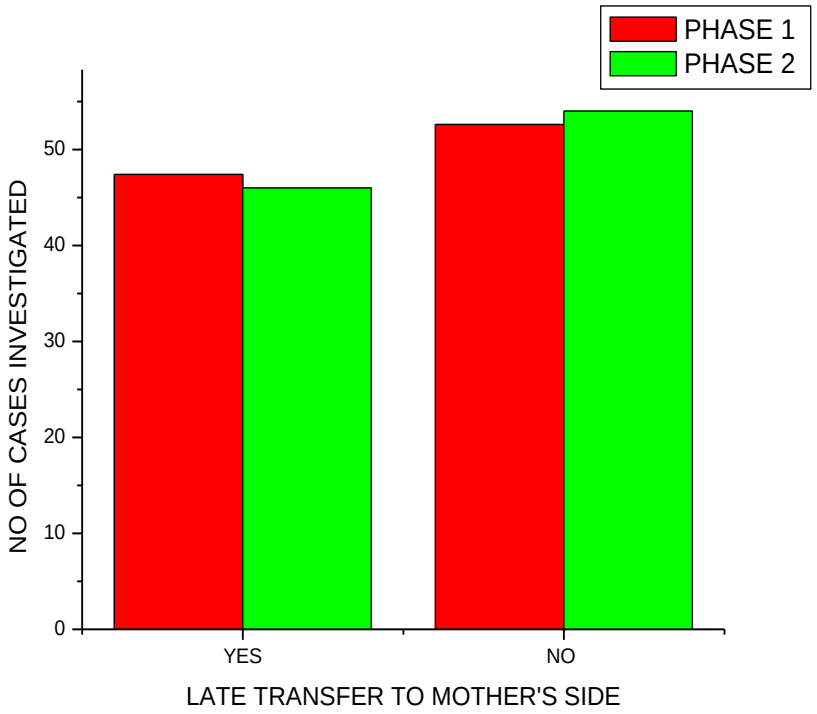

Figure 73: A comparison of prevalence of early transfer of newborn to mother's side in enrolled study population in two phases of study

Table 49: Practice of late transfer to mother's side: comparison in two phases of study

		PHASE 1		PHASE 2		TOTAL	CHI SQUARE VALUE	P-VALUE
LATE TRANSFER TO MOTHER SIDE	N	45	47.4%	103	46.0%	148	0.052	0.902
	Y	50	52.6%	121	54.0%	171		

Table 50: A comparison of study population and other attributes

ATTRIBUTES	PHASE 1	PHASE 2
MEAN MATERNAL AGE (YEARS)	31.37 ± 5.4	29.75 ± 3.87
MEAN BIRTH WEIGHT (GRAMS)	2843 ± 485.87	2892 ± 432.69
MEAN GESTATION (WEEKS)	37.2 ± 1.32	37.5 ± 1.24
SEX (FEMALE:MALE RATIO)	1.06:1	1.01:1
NO. OF NEONATES	95	224
LSCS:NVD	6.9:1	2.5:1
RATE OF **EIBF**	10.5%	52.7%
RATE OF S-T-S CONTACT	9.5%	41.1%

DISCUSSION

The present study was conducted by us in our Neonatology & Gynaecology unit to investigate all the factors hindering breastfeeding practices and to devise quality initiative tools to improve the rates of initial breastfeeding. In the first phase of the study, all the mothers, their families and staff were questioned regarding the problems they faced in initiating and sustaining breastfeeding. A significant knowledge gap was observed regarding the benefits of early breastfeeding for a newborn and mothers. It was found that the average time to start breastfeeding was 19 hours at our hospital and common factors for delay of EIBF were mode of delivery being cesarean section (76%), lack of knowledge (54.1%), late transfer of neonate to mother's side (52.6%), mothers not knowing the right way (48.9%), perceptions about importance of breastfeeding (37.5%), presence of post-operative pain (36.8%), lack of initiative amongst the attending paediatric and gynaecology residents. Prevalence of early initiation of breastfeeding in our hospital was found to be only 10.5%.

In a study conducted by Neha Patyal et al [26] in a tertiary care hospital, it was reported that early breast feeding was initiated in 12% of study population in the baseline data. They enrolled only babies being born by normal vaginal deliveries. At the end of three months, they were able to achieve their goal of increasing rates of EIBF upto 80% in a resource limited setting without the availability of a dedicated lactation counsellor suggesting the importance of simple and feasible QI tools.

In a similar study by Dudeja et al [25], it was observed that median time to start breastfeeding in LSCS was more than in normal vaginal delivery, thus concluding that LSCS was major hurdle in establishment of feeding in the first hour of birth. Major reason was found to be shifting of baby to LR observation room post LSCS and delay in transfer of the babies to mother's side similar to our study. They developed standard operational protocols and started EIBF in OT

itself using sequential PDSA cycles similar to our study which markedly improved the rates of EIBF from 0 to 93% during the study period.

In the first phase of our study 95 mothers were enrolled. The results from this baseline study are presented in Figure 14 to Fig 36.Mean age of mothers enrolled was 31.37 years. Out of the study population, 35.7% mothers were less than 30 years of age, 56.8% between age of 30-40 years. 57.9% of the study population was urban. 12.6% babies were delivered by normal vaginal delivery and the rest by c- section. Majority of mothers in the study group were graduates (52.7%) and belonged to middle income group as per Modified Kuppuswamy scale. Further, it was observed that 16.8% babies required NICU stay and51.6% of those born were females. Only 5.3% of newborns developed feed intolerance. The mean birth weight of newborns enrolled in this study group was 2843 + 485.87 gm. There was no statistical difference in maternal age, area of residence, maternal education, gravidity of mothers, birth gestation, gender of newborns in the two phases of the study.

As per the American Academy of Paediatrics section on breastfeeding model policy: “Healthy term newborns with no evidence of respiratory compromise will be placed and remain in direct skin-to-skin contact with their mothers immediately after delivery until the first feeding is accomplished, unless medically contraindicated” [37]. An official practice brief from the Association of Women's Health, Obstetric and Neonatal Nurses recommends immediate STS that is uninterrupted and continues for the “first hour of life or until the first breastfeeding is completed” [38].Skin-to-skin contact aids in early establishment of breastfeeding and improves latching. It is known to increase mother’s milk production and associated with longer exclusive breastfeeding times. It also aids in thermoregulation of the newborn soon after the birth. In our study, it was observed that there was no policy for skin-to-skin contact, especially in births by cesarean sections and rate was also low in case of normal vaginal deliveries as well. It was hence used as one of the important quality initiatives to help improve breastfeeding.

A study conducted in a rural hospital in Mexico by Luis Espino et al [35] emphasized the importance of simple low-cost educational intervention in implication of immediate skin-to-skin contact and practice of early breastfeeding as part of routine care in a rural hospital. Their study applied a two steps educational intervention over a period of 3 months where they encouraged the policy of starting skin-to-skin contact in the delivery room itself and continuing it for an hour after birth unless contraindicated by medical illness in either mother or the newborn. They could achieve establishment of skin-to-skin contact and early initiation of breastfeeding in a maximum of 77% cases. However, their study had a few limitations, such as short duration of study. Secondly, they could not evaluate the number of newborns who didn't receive continuous and uninterrupted skin-to-skin contact, nor issues hindering breastfeeding or difficulties with establishing skin-to-skin.

In the next phase of our study, a quality improvement (QI) team was formed and quality initiative tools were developed to improve the time to start breastfeeding. Different QI tools implemented in our study have been depicted in Fig. 1 to Fig 12.

One of the major tools applied was educating the mothers, their families, staff and the residents. Group discussions and counselling sessions with the antenatal mothers, their families and staff on duty regarding the importance of breastfeeding, the right way to feed the baby, practice of Skin-to-Skin contact. One of the most important intervention made was appointment of two lactation counsellors to be present during the delivery and starting skin-to-skin contact and breastfeeding as early as possible.

After the quality initiatives were applied, data was again collected to analyse the prevalence of early initiation of breastfeeding. It was found that rates of EIBF increased to 34.2%at the end of PDSA cycle 1.The study population enrolled in this cycle was 40 in number. 12% of mothers underwent normal vaginal delivery. 41.5% mothers were aged more than 40 years with mean age of 29.5. 68.3% of study population resided in urban area. 41.5% were graduates. 73.2% of mothers were multigravidas. In this cycle, QI team focused on

educating mothers and their families about the role and benefits of breastfeeding. Moreover, newly appointed lactation counsellors were helping mothers in feeding their newborns. They were assigned the duty of initiating the breastfeeding and starting STS immediately after the birth. Awareness about these aspects was given to the staff, residents and gynaecology residents as well. The staff was also taught and trained about the right way to breastfeed, the proper posture and benefits of early initiation of breastfeeding. STS was achieved in 36.6% cases with the combined efforts of nursing staff and residents attending delivery. By the end of first PDSA cycle, 100% newborns born by normal vaginal delivery were breastfed within the first hour of birth while only 6.8% of those born by LSCS.

In a study by Ravi Sachan et al [27] PDSA methodology was adopted for bringing out change in routine care practices immediately after delivery. They could achieve EIBF only an in 27% case which was achieved by early transfer of mother and newborn to post-delivery observation room. The rates of EIBF improved markedly to 43% when STS was tested after 6 months. Their study emphasized on the use of pre-delivery counselling, STS, delayed cord clamping (DCC), early transfer of mother and baby, allowing a family member in delivery room for achieving the rates of EIBF upto 81% and STS rates rose to 60% by the end of study.

In a study by Renuka et al [39] rates of breastfeeding initiation within one hour of life increased to 100% from baseline of 25% within 3 months of simple measures such as counselling by lactation counsellors, proper documentation of time of initiation of breastfeeding and sustaining efforts of mass awareness in the subsequent PDSA cycles.

In PDSA 2, the study population enrolled in this cycle was 40 in number. 33% of mothers underwent normal vaginal delivery. 52.4% mothers were aged 30-40 years with mean age of 29.6. 52.4%of study population resided in urban area. 69% were graduates. 57.1% of mothers were multigravidas. By the end of second PDSA cycle, it was observed that STS wasn’t universal and breastfeeding on OT table was

feasible but there was resistance from anaesthesia team. So, major emphasis was on educating nursing staff in OT and sensitizing the residents from gynaecology department and paediatrics. The lactation counsellors were made to attend deliveries and encourage the practice of STS in a vigorous neonate. If neonate needed reassessment or admission into observation room for observation care or perinatal complications, early transfer of neonate to mother's side as soon as possible. Also entry of attendants and male staff in delivery room was restricted so mother doesn't feel embarrassed. A rate of 57.2% of EIBF was achieved with consistent efforts of QI team. STS was achieved in 47.6% cases. Also, babies were transferred earlier in 23.8% cases as compared to 58.5% in previous cycle.

In the third PDSA cycle, the rates of EIBF achieved were 54.8%, skin-to-skin contact were 33.3% and early transfer to mother side in 83.3% cases. This fall in compliance was likely attributable to rapid turnover of nurses and doctors every month, leaving behind re-orientation of new teams a challenge.

In a study by Safal Muhammed et al [40] observed that major problem was faced in babies who were delivered by primigravidas mothers and those delivered by caesarean section. They improved the rate of breastfeeding in firsts 24 hours of life from 33.3 to 94.4% in successive PDSA cycles by systematically analysing the problem and changing attitudes of those providing care with education, sustained positive reinforcement. Similar to our study one of the limitations of their study was that they didn't use any breastfeeding objective tool like LATCH score which could have been a better measure of effective breastfeeding. Another limitation was that they didn't follow up the infant mother dyads for rates of exclusive breastfeeding within the first six months of life.

PDSA 4 was conducted to assess the sustainability of change ideas brought about in sequential PDSA cycles by the QI team. It involved enrolment of 99 subjects. Of the enrolled mothers, 48.5% belonged to age group of 30-40 years of age, 64.3% were from urban area, 66.7% were graduates and 56.6% belonged to middle class.

43.4% were primigravidas. 50.5% were male neonates. 68.7% neonates were born by LSCS. In the fourth PDSA cycle, sustainability of EIBF and STS was assessed. Rate of EIBF was found to be 57.5% and STS was 44.4%.

In our study, we observed that time to start breastfeeds was significantly associated with socio-economic status of mothers, mode of delivery, STS and late transfer to mother side after birth.

It was observed that the rates of EIBF improved from 9.5% observed in base line study to 57.5%at the end of PDSA4. This was similar to the study by Sachan et al [24], which brought about successful change ideas using point of care quality improvement methodology to improve the rates of early breastfeeding and new born care. Rates of skin-to-skin contact were found to be 44.4%. The percentage of newborns who were transferred early to mother's side immediately after delivery were 80.8%.

There was a significant improvement in time to start breastfeeding in the second phase of study as compared to phase 1. Also, it was observed time to start breastfeeding was significantly associated with rates of skin-to-skin contact. With the subsequent PDSA cycles, there was improvement in rates of skin to contact which were statistically significant in the second phase of study as compared to first phase.

In our study, initial rates of EIBF at the baseline were 41.6% in neonates born by normal vaginal deliveries while only a 5.6% in those born by LSCS. Overall rates in normal delivery improved to a 100% by rates could not be sustained in the PDSA 4 and dropped to 87%. In neonates born by LSCS the rates of EIBF gradually improved over the sequential PDSA cycles. The rates improved to upto 47.2% by the end of PDSA 3 but couldn't be sustained and dipped to 44% in last PDSA cycle at the end of 12 months.

Our study had some challenges and limitations encountered while attempting to implement a quality initiative. One of the major challenges was sustaining the motivation and engagement of nursing staff, resident doctors involved in the study. To address this, the QI

team met regularly, shared feedbacks and included personnel at all levels. Another challenge was rapid turnover of nurses and doctors each month. To address this, new stuff was introduced with the new protocol and quality interventions during their induction and teaching sessions were held. One of the limitations, being the brief period of time for which the study was conducted and limited dataset. Another limitation was the absence of a lactation counsellor in the night shift. One limiting factor was absence of an objective tool like LATCH score for assessing the quality of breastfeeding. Also, STS during the first hour after birth was not assessed as per the international standards of immediate, continuous and uninterrupted STS. Despite the challenges and limitations, our study could demonstrate a significant improvement in EIBF by using simple QI tools in a tertiary care hospital. Our study is the first one in the region to significantly improve rates of breast feeding as early as possible after birth using QI tools. Our study is a boost for other neonatal units in the region to improve EIBF without the use of additional resources. Even though the sample size was small, but significant conclusions could be drawn regarding factors hindering EIBF in a tertiary care setup.

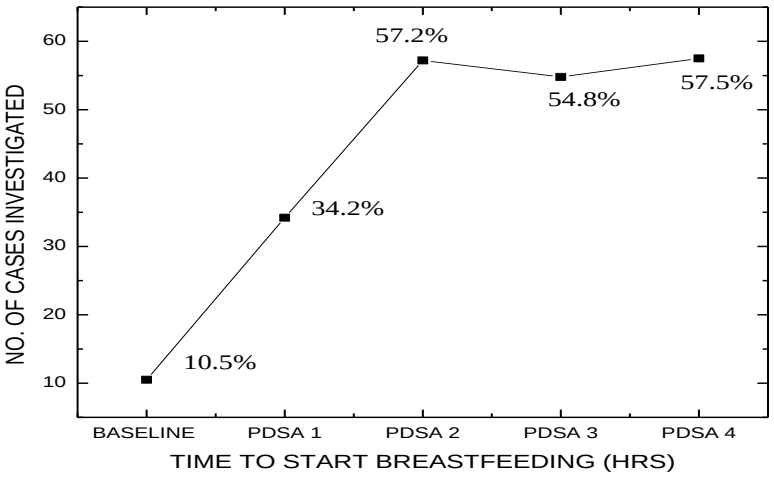

Figure 74: Percentage of increase in rates of EIBF in sequential PDSA cycles

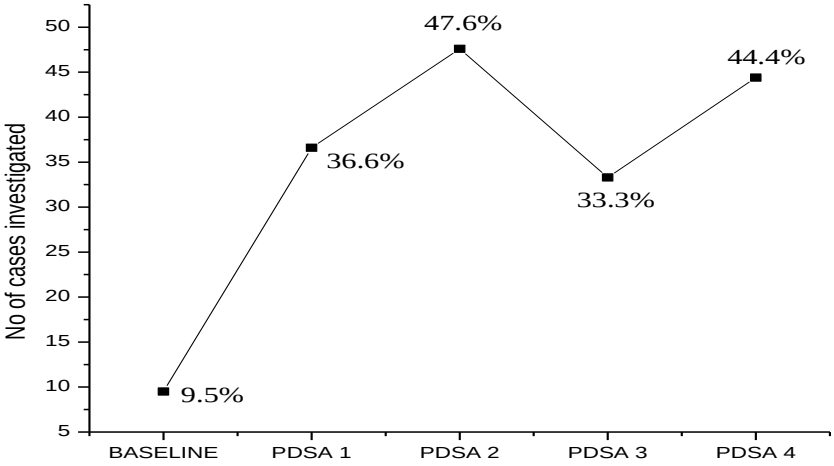

Figure 75: Comparison of rates achieved for Skin-to-Skin contact in different cycles of study

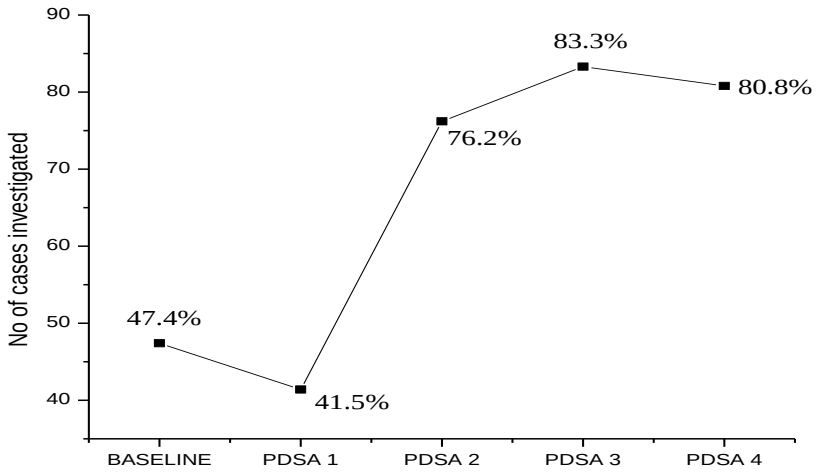

Figure 76: Comparison of rates achieved for Early transfer to mother's side

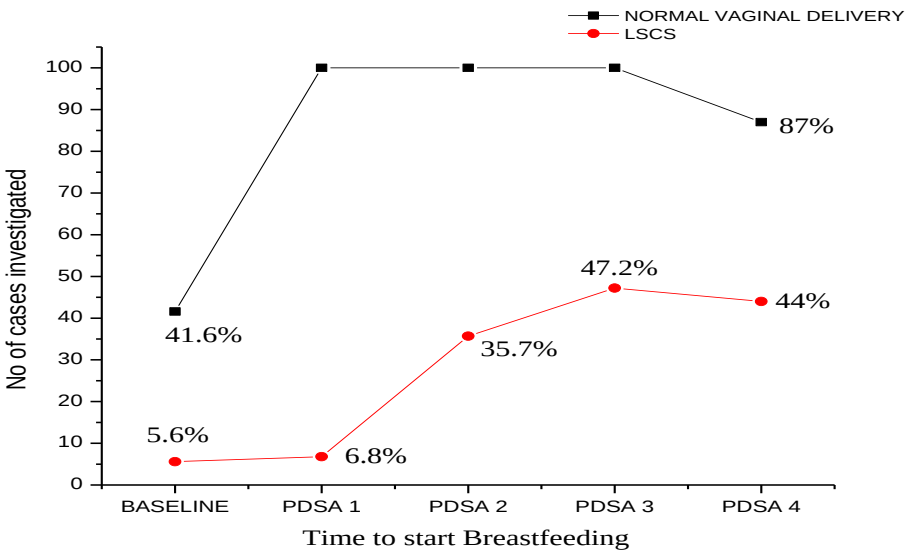

FIGURE 77: Plot depicting increase in rates of EIBF in LSCS and NVD respectively.

SUMMARY & CONCLUSION

This QI study could accomplish a significant increase in rates of EIBF and practice of S-T-S contact using PDSA methodology. This study concluded that quality improvement initiative has capability to integrate the desired change without the use of additional resources. However, the challenge remains in sustaining the EIBF and STS while further exploring new strategies.

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GROUP	NAME	MRD	AGE	RURAL/ URBAN	education	s.e. status	GRAVIDA	PARA	ABORTIONS	LIVE	ANEMIA	hypothyroidism	G.HTN	OBS COMPLICATIONS	GDM	LIVER DYSFUNCTION	ongoing medication	36 wks	37 wks	38wks	39 wks	40 wks	gender
0	SONIA	1443245	38	U	GRAD	high	1				N		N	Y	N	N	N		Y				F
0	RAJDEEP	8363	32	R	P.G.	MIDDLE	2	1		1	N	Y	N	N	N	N	N			Y			M
0	HINA	1421602	36	U	GRAD	MIDDLE	1				Y		N	N	N	N	N				Y		F
0	GURPREET	269304	30	R	10TH	MIDDLE	1				N		N	N	N	N	N	Y					F
0	REENA	1320130	25	U	12TH	MIDDLE	4	2	2	2	Y		N	Y	N	N	N		Y				F
0	RANJIT	1396013	35	R	12TH	MIDDLE	5	2	2	1	N	Y	Y	Y	N	N	LABETOLOL		Y				M
0	DIVYA	535190	30	U	12TH	LOWER	1				N		N	N	N	N	N		Y				F
0	ANSHIKA	1445945	25	U	GRAD	MIDDLE	2	1		1	N		N	N	N	N	N				Y		F
0	PRITPAL	417865	30	U	GRAD	MIDDLE	1				Y	Y	N	N	N	Y	ELTROXIN			Y			M
0	NEHA	1277746	19	R	P.G.	MIDDLE	2	1		1	N		N	Y	N	N	N				Y		F
0	MEENU	841487	32	U	P.G.	MIDDLE	1				N		Y	N	N	N	N				Y		M
0	ANITA	1185282	34	R	P.G.	MIDDLE	2	1		1	Y		Y	N	N	N	N			Y			F
0	POONAM	1415815	30	R	P.G.	MIDDLE	3	1	1	1	Y		N	N	N	N	N	Y					M
0	SWATI	823585	35	R	GRAD	MIDDLE	1				N	Y	N	Y	N	N	N		Y				F
0	NEELAM	1443256	32	R	P.G.	MIDDLE	1				N		N	N	N	N	N		Y				M
0	HARJINDER -1	1443482	42	R	P.G.	HIGH	1				N	Y	N	N	N	N	ELTROXIN			Y			F
0	HARJINDER-2	1443483	42	R	12TH	MIDDLE	2		1		N		N	Y	N	N	N	Y					F
0	HARPREET	1443816	30	R	GRAD	HIGH	2		1		Y		N	N	N	N	N			Y			M
0	MEENAKSHI	1434943	35	U	GRAD	HIGH	1				N		N	N	N	N	N	Y					M
0	MANDEEP	9008	35	R	GRAD	MIDDLE	2		1		N	Y	N	N	N	N	N			Y			F
0	SHWETA	1443350	31	U	GRAD	MIDDLE	3	2		1	Y		N	N	N	N	N	Y					M
0	TANIA	149325	32	U	P.G.	MIDDLE	1				N		N	Y	Y	N	N				Y		M
0	SANDEEP	1393710	34	U	GRAD	MIDDLE	1				N		N	N	N	N	N	Y					M
0	NEHA GROVER	1322719	34	U	12TH	MIDDLE	2	1		1	N	Y	N	N	N	N	N					Y	M
0	RICHA	668966	28	U	GRAD	MIDDLE	1				N		N	Y	N	N	N		Y				F
0	SHRUTI	1255415	31	U	12TH	MIDDLE	2	1		1	N		N	N	N	N	N					Y	F
0	NIRMAL	1391957	28	R	GRAD	MIDDLE	3		2		N		N	N	N	N	N	Y					M
0	SUKHPREET	1389017	30	R	10TH	LOWER	1				N		N	N	N	N	N				Y		F
0	MANMEET	1372386	28	U	P.G.	MIDDLE	2	1		1	N		N	N	N	N	N				Y		M
0	DISHA	1391377	27	U	12TH	LOWER	1				N	Y	N	N	N	N	N		Y				F
0	RICHA D.	21891	36	U	P.G.	MIDDLE	2	1		1	N		N	Y	Y	N	N		Y				M
0	KHUSHPREET	1372688	30	R	GRAD	HIGH	1				N		N	N	N	N	N				Y		M
0	HARMEET	1392266	36	U	P.G.	MIDDLE	5	1	3	1	N	Y	N	N	N	N	ELTROXIN			Y			F
0	GAGANPREET	1377156	29	U	GRAD	MIDDLE	2	1		1	N	Y	N	N	Y	N	N	Y					M
0	KIRANJOT	123567	28	R	GRAD	MIDDLE	1				N		N	N	N	N	N	Y					M
0	MONIKA	554005	30	R	P.G.	HIGH	1		1	1	N	Y	N	N	N	Y	THYROXINE	Y					F
0	RUHI	234568	30	U	GRAD	HIGH	2	1		1	Y		N	N	N	N	N	Y					M
0	SARABJIT	1411509	37	U	10TH	MIDDLE	2	1		1	Y		N	N	N	N	N	Y					M
0	SURPREET	1456870	29	U	10TH	MIDDLE	1				N		N	N	N	N	N	Y					F
0	AMANDEEP	1342657	25	U	GRAD	MIDDLE	2		1		Y		N	N	N	N	N			Y			M
0	KIRANDEEP K	1543210	29	U	P.G.	MIDDLE	1				N		N	N	N	N	N		Y				F
0	UTTAMPREET	136532	28	U	GRAD	MIDDLE	3	1	1	1	N	Y	N	N	N	N	ELTROXIN		Y				F
0	KIRAN	143265	31	U	P.G.	MIDDLE	4	1	2	1	N		N	N	N	Y	N			Y			F
0	GEETA	1386311	30	U	GRAD	HIGH	2		1		N		N	N	N	N	N		Y				F
0	TARVINDER	145654	26	U	GRAD	MIDDLE	2	1		1	N		N	N	N	N	N	Y					M
0	HARPREET	143523	26	R	GRAD	HIGH	2	1		1	N	Y	N	N	N	N	N	Y					M
0	NEELAM	138962	27	U	GRAD	HIGH	3	2		2	N		N	N	N	N	N			Y			M
0	POONAM	1387837	36	U	GRAD	MIDDLE	1				Y		N	N	Y	N	N		Y				F
0	SHREYA	1388509	33	U	GRAD	MIDDLE	4	2		1	N	Y	N	N	N	N	N	Y					M
0	REKHA -2	1387220	27	R	GRAD	MIDDLE	2	1		1	N	Y	N	N	N	N	N		Y				M
0	REKHA -1	1387220	27	R	GRAD	MIDDLE	2	1		1	N		N	N	N	N	N		Y				M
0	PRIYA	1389880	26	U	GRAD	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN		Y				M
0	MUGHDA	1417105	29	U	P.G.	HIGH	2	1		1	Y		N	N	N	N	N					Y	F
0	SURINDER	1447910	35	R	P.G.	HIGH	1				N		N	N	N	N	N				Y		M
0	ASHA	1445269	26	R	GRAD	MIDDLE	3	1	1	1	N	Y	N	N	N	N	THYROXINE			Y			F
0	DEEPIKA	1313949	31	U	P.G.	LOWER	1				N		N	Y	N	N	N			Y			M
0	SHAKUNTALA2	1446759	44	R	12TH	MIDDLE	2		1		N	Y	N	N	N	N	ELTROXIN		Y				F
0	SHAKUNTALA1	1446760	44	R	GRAD	MIDDLE	4	1	2	1	Y		Y	N	N	N	LABETOLOL		Y				F
0	MEDHA	1317003	25	R	GRAD	MIDDLE	1				N	Y	N	N	N	N	N				Y		M
0	LALITA	1323176	23	R	GRAD	MIDDLE	2	1		1	Y	Y	N	N	N	N	N		Y				F
0	LISHA	1447115	26	U	GRAD	MIDDLE	1				N		Y	N	N	N	N					Y	M
0	GAYATRI	1438388	30	U	12TH	MIDDLE	1				N		Y	N	N	N	N				Y		F
0	GURPREET	298497	33	R	10TH	MIDDLE	2	1		1	Y		N	N	N	N	N			Y			F
0	REENA	1449360	34	U	P.G.	HIGH	2	1		1	N		N	N	N	N	N		Y				F
0	MANASPREET	835995	31	U	GRAD	HIGH	2	1		1	N		N	N	N	N	N			Y			F

GROUP	mode of delivery	Birth Weight	BW	APGAR 1 Mint	APGAR 5 Mint	time of starting breast feeds (HR)	LAK	IMP of BF	LACK OF LAC COUNS	POSTOP PAIN	INV NIPPLES	EMBARASSED	SUPP. FAMILY	DOESN'T KNOW RIGHT WAY	OUTDATED	INCONV BF	SUPREMACY OF FORMULA FEEDS	CULTURAL BELIEFS	OVERWORKED	DAY NIGHT DIFF	S-T-S CONTACT	LATE TRANSFER TO MOTHER SIDE
0	NVD	2.5-2.9	2840	8	10	<1 HR	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
0	NVD	3-3.4	3140	8	10	<1 HR	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	3-3.4	3100	9	10	1-3 HR	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	3.5-3.9	2140	8	9	24-36 HR	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	Y
0	LSCS	<2	1940	8	9	24-36 HR	N	Y	N	Y	N	Y	N	Y	N	N	N	N	N	N	N	N
0	LSCS	2-2.4	2350	6	8	24-36 HR	Y	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y
0	LSCS	3.5-3.9	3240	9	10	24-36 HR	Y	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	N
0	LSCS	3-3.4	3400	9	10	24-36 HR	Y	Y	Y	N	N	N	Y	N	N	N	N	N	N	Y	N	Y
0	LSCS	3-3.4	3080	7	9	24-36 HR	N	Y	N	Y	N	N	Y	N	N	N	N	Y	N	N	N	Y
0	LSCS	3.5-3.9	3560	7	8	24-36 HR	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	Y
0	LSCS	3-3.4	3100	8	9	24-36 HR	N	Y	Y	N	N	N	N	Y	N	N	Y	Y	N	N	N	Y
0	NVD	2-2.4	2600	9	10	>72 HR	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
0	LSCS	2-2.4	2620	5	8	>72 HR	Y	N	N	Y	N	Y	N	N	Y	Y	Y	N	N	N	N	Y
0	LSCS	2-2.4	2260	8	10	6-12 HR	N	Y	N	N	N	N	Y	Y	N	Y	Y	N	N	N	N	Y
0	LSCS	3-3.4	3280	8	10	6-12 HR	Y	Y	N	Y	N	N	N	Y	N	Y	Y	N	N	N	N	N
0	LSCS	2.5-2.9	2900	9	10	6-12 HR	N	Y	N	N	N	N	N	Y	N	N	Y	Y	Y	Y	N	Y
0	LSCS	2.5-2.9	2600	9	10	6-12 HR	Y	N	Y	Y	N	Y	N	N	Y	N	N	Y	N	N	N	Y
0	LSCS	2-2.4	2300	9	10	6-12 HR	N	Y	N	Y	N	N	Y	N	N	Y	Y	N	N	N	N	Y
0	LSCS	3-3.4	3160	9	10	6-12 HR	Y	Y	Y	Y	N	N	N	Y	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2700	8	10	6-12 HR	N	Y	N	N	N	Y	Y	N	N	N	N	Y	N	N	N	N
0	NVD	3-3.4	3440	8	9	12-24 HR	N	Y	N	N	N	Y	Y	N	N	N	N	Y	N	N	Y	N
0	LSCS	2.5-2.9	2980	7	9	12-24 HR	N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	N	N	N	N	N
0	LSCS	<2	1980	9	10	12-24 HR	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	N	N	Y
0	LSCS	3-3.4	3400	7	10	12-24 HR	Y	N	N	N	N	Y	N	Y	N	N	N	N	N	N	N	Y
0	LSCS	3-3.4	3080	7	9	12-24 HR	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
0	LSCS	2.5-2.9	2940	6	8	12-24 HR	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	N	N
0	LSCS	2-2.4	2340	8	9	12-24 HR	N	N	N	N	N	N	N	N	Y	Y	Y	Y	N	N	N	N
0	NVD	2-2.4	2250	6	9	12-24 HR	Y	N	N	N	N	Y	N	Y	N	N	N	Y	N	Y	N	Y
0	NVD	2.5-2.9	2960	9	10	1-3 HR	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N
0	LSCS	2-2.4	2120	9	10	1-3 HR	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2-2.4	2300	7	9	12-24 HR	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N	N	Y
0	LSCS	3.5-3.9	3720	6	9	12-24 HR	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N	Y
0	LSCS	2.5-2.9	2900	9	10	12-24 HR	N	Y	Y	N	N	N	Y	N	N	N	N	N	N	N	N	Y
0	LSCS	>4	4020	9	10	12-24 HR	Y	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	Y
0	LSCS	2.5-2.9	2900	6	9	12-24 HR	N	N	Y	Y	N	N	N	Y	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2700	8	9	12-24 HR	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y
0	LSCS	2.5-2.9	2820	9	10	12-24 HR	N	Y	N	N	N	N	Y	N	N	Y	N	N	N	Y	N	Y
0	LSCS	2-2.4	2460	8	9	12-24 HR	Y	Y	N	Y	N	N	Y	N	N	Y	Y	N	N	N	N	N
0	LSCS	2-2.4	2140	8	9	12-24 HR	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N	Y
0	LSCS	3-3.4	3440	8	10	12-24 HR	N	N	N	N	Y	N	N	N	N	Y	Y	N	N	N	N	N
0	LSCS	3.5-3.9	3780	7	9	12-24 HR	Y	Y	N	N	N	Y	Y	Y	N	N	N	N	Y	Y	N	Y
0	LSCS	2.5-2.9	2760	8	9	1-3 HR	Y	Y	N	N	N	N	Y	N	N	Y	N	N	N	N	Y	N
0	NVD	3.5-3.9	3500	7	9	1-3 HR	Y	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N
0	LSCS	3-3.4	3300	9	10	12-24 HR	Y	Y	N	Y	N	Y	Y	Y	N	N	N	N	N	Y	N	Y
0	LSCS	2.5-2.9	2760	8	9	12-24 HR	Y	N	N	Y	N	N	N	N	Y	Y	Y	N	N	N	N	N
0	LSCS	2.5-2.9	2680	8	9	12-24 HR	N	Y	N	N	N	Y	Y	N	N	N	N	N	Y	N	N	Y
0	LSCS	3-3.4	3200	8	10	12-24 HR	Y	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	N	N	Y
0	LSCS	2.5-2.9	2760	9	10	12-24 HR	Y	Y	N	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	Y
0	LSCS	3-3.4	3100	9	10	12-24 HR	N	Y	Y	N	N	N	N	Y	N	N	N	Y	N	N	N	Y
0	LSCS	3.5-3.9	3860	7	9	24-36 HR	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	N	N	N	Y
0	LSCS	2.5-2.9	2520	7	9	24-36 HR	Y	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	N	Y
0	LSCS	3-3.4	3480	8	9	24-36 HR	Y	N	N	N	N	Y	Y	Y	N	N	N	Y	N	Y	N	Y
0	LSCS	3-3.4	3240	9	10	1-3 HR	N	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	N	Y	N
0	LSCS	2.5-2.9	2960	8	9	1-3 HR	N	N	N	Y	N	N	Y	N	Y	Y	Y	N	N	N	N	N
0	NVD	3-3.4	3020	8	9	1-3 HR	Y	N	N	Y	N	Y	N	Y	N	N	N	Y	N	N	Y	Y
0	LSCS	3-3.4	3340	6	8	24-36 HR	N	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N	Y
0	LSCS	3-3.4	3420	8	9	24-36 HR	Y	N	N	N	N	N	Y	Y	N	Y	Y	N	N	N	N	Y
0	LSCS	2.5-2.9	2800	8	9	24-36 HR	N	Y	Y	N	N	N	Y	N	N	N	N	Y	N	N	N	Y
0	LSCS	3-3.4	3120	7	9	24-36 HR	Y	N	Y	N	N	N	Y	Y	Y	N	Y	Y	N	N	N	N
0	LSCS	3-3.4	3100	9	10	3-6 HR	Y	Y	N	N	N	N	Y	Y	N	Y	Y	N	N	N	N	N
0	LSCS	3.5-3.9	3620	7	8	>72 HR	Y	Y	Y	N	Y	N	N	Y	N	Y	Y	N	N	Y	Y	N
0	LSCS	2.5-2.9	2720	8	9	3-6 HR	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2800	9	10	3-6 HR	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	Y
0	NVD	3-3.4	3260	8	9	3-6 HR	Y	Y	N	Y	N	Y	N	N	Y	Y	Y	Y	N	N	Y	Y
0	NVD	2.5-2.9	2560	8	9	3-6 HR	N	N	N	Y	N	N	Y	Y	N	N	N	Y	N	Y	Y	Y

GROUP	NAME	MRD	AGE	RURAL/ URBAN	education	s.e. status	GRAVIDA	PARA	ABORTIONS	LIVE	ANEMIA	hypothyroidism	G.HTN	OBS COMPLICATIONS	GDM	LIVER DYSFUNCTION	ongoing medication	36 wks	37 wks	38wks	39 wks	40 wks	gender
0	DEEPA	1392720	56	R	P.G.	HIGH	1				N		N	N	N	N	N			Y			M
0	SONIA JAIN	211572	35	U	GRAD	MIDDLE	1				N		N	N	N	N	N	Y					M
0	ANNIE THOMAS	218022	32	U	P.G.	MIDDLE	4	2	1	1	Y		N	N	Y	Y	N		Y				M
0	SALONI	1390217	31	U	P.G.	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN	Y					M
0	KIRANDEEP	1379381	28	R	GRAD	HIGH	2	1		1	N		N	N	N	N	N			Y			F
0	SONIA SHARMA	1314367	34	U	P.G.	MIDDLE	2	1		1	N		N	N	N	N	N			Y			F
0	SAPNA SAINI	680575	38	R	GRAD	MIDDLE	1				N		N	N	N	N	N		Y				M
0	JASPREET	1426058	31	U	GRAD	MIDDLE	2	1		1	N		N	Y	N	N	N	Y					F
0	SAKSHI	1299722	25	R	P.G.	HIGH	2	1		1	N		N	N	N	N	N	Y					M
0	GURJINDER	1171837	30	U	GRAD	MIDDLE	1				Y		N	N	N	N	N			Y			F
0	NEHA	630055	28	R	12TH	MIDDLE	2	1		1	N		N	N	Y	N	ELTROXIN			Y			F
0	PANKHURI JUNEJA	672151	30	R	P.G.	HIGH	1				Y		N	N	N	Y	N		Y				M
0	SANDEEP	1414368	26	R	P.G.	HIGH	1				N		N	N	N	N	N		Y				F
0	MANJEET KAUR1423232		46	R	GRAD	HIGH	1				N		N	N	N	N	N		Y				M
0	DEVANJALI	1419013	29	U	GRAD	MIDDLE	2	1		1	N		N	N	Y	N	N	Y					M
0	ANITA RANI	1422318	29	U	GRAD	MIDDLE	1				N		N	N	N	N	N	Y					F
0	VAANI	1424639	34	U	GRAD	MIDDLE	1				N		N	N	N	Y	N				Y		M
0	TAANYA	1198102	25	U	GRAD	HIGH	1				N		N	N	N	N	N	Y					M
0	MANISHA	506717	34	U	GRAD	MIDDLE	2	1		1	N		N	N	N	Y	N		Y				F
0	MONIKA	417133	33	R	P.G.	MIDDLE	1				N		Y	N	N	N	N			Y			M
0	KREENA GARG	1424719	27	U	P.G.	HIGH	4	2	1	2	N		Y	N	N	Y	LABETOLOL	Y					M
0	YASHIKA	1424387	30	U	12TH	HIGH	3	1	1	1	N		N	N	Y	N	N		Y				F
0	SANA	1425249	41	U	P.G.	HIGH	1				N	Y	N	N	N	N	N			Y			F
0	RAJNI	823206	31	R	GRAD	HIGH	1				N		N	N	N	N	N				Y		F
0	MANPREET K	1302201	30	U	GRAD	HIGH	2	1		1	Y		N	N	N	Y	N		Y				F
0	POONAM	1423308	32	U	GRAD	HIGH	1				N		N	N	N	N	STEROIDS	Y					F
0	KAUSHALYA	1393191	25	R	GRAD	MIDDLE	1				Y		N	N	N	N	N	Y					M
0	PARVEEN K	1304859	35	R	GRAD	MIDDLE	1				Y		N	N	N	N	N	Y					F
0	PARDEEP K	1158349	28	R	12TH	MIDDLE	2	1		1	Y		N	Y	N	N	N				Y		F
0	MEENAKSHI JAIN	1423314	30	U	GRAD	LOWER	2	1		0	N	Y	N	N	N	N	TLD(HART)	Y					F
1	SHILPI	598638	32	U	GRAD	MIDDLE	3	1	1	1	N	Y	N	Y	Y	N	N	N	Y	N	N	N	F
1	PREETI	1545012	31	U	GRAD	MIDDLE	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	F
1	KIRANDEEP	1543188	27	R	8TH	LOWER	4	1	2	1	N	N	N	Y	N	N	N	Y	N	N	N	N	F
1	SHIKHA	1545617	32	U	P.G.	HIGH	2	1		1	Y	Y	N	Y	N	N	N	N	N	N	Y	N	F
1	MANJIT	1546195	26	R	10TH	LOWER	3	2			Y	N	N	Y	N	N	N	Y	N	N	N	N	M
1	MOKSHI	1424932	25	U	GRAD	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN	N	Y	N	N	N	M
1	KULJIT	1544999	36	R	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
1	SUZAN	1534687	28	U	12TH	HIGH	8	1	6	1	Y	N	N	N	N	N	N	Y	N	N	N	N	F
1	MITTHAL	530176	33	U	P.G.	HIGH	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
1	NEHA	160483	33	U	GRAD	HIGH	3	1	1	1	Y	N	N	N	N	N	N	N	N	Y	N	N	F
1	GURPREET	1342508	31	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	N	N	Y	N	M
1	KULWINDER	1547460	29	U	GRAD	MIDDLE	2	1		1	N	N	N	Y	N	N	N	N	N	N	N	Y	M
1	PRIYANKA	371943	36	U	P.G.	MIDDLE	3	2		1	N	N	N	Y	N	N	N	N	Y	N	N	N	F
1	JASVIR	1470687	26	R	GRAD	MIDDLE	1				Y	N	N	N	Y	N	N	N	Y	N	N	N	M
1	KAVITA	1427797	30	R	12TH	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	M
1	HEENA	1548023	34	U	GRAD	HIGH	4	1	2	1	N	N	N	Y	Y	N	N	N	Y	N	N	N	M
1	SATPREET	1165596	31	U	P.G.	HIGH	3		2		N	N	N	Y	N	N	N	Y	N	N	N	N	F
1	POOJA	691383	28	U	12TH	HIGH	3	1	1	1	N	N	N	N	N	N	N	N	N	Y	N	N	F
1	BABITA	1550012	27	U	P.G.	HIGH	2		1		Y	Y	N	N	N	N	ELTROXIN	N	N	N	Y	N	F
1	NEHA KAURA	1550082	34	U	P.G.	HIGH	2	1			N	N	N	Y	N	N	N	N	Y	N	N	N	M
1	MUSKAN	1150872	24	R	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	M
1	PALAK	1443049	25	U	GRAD	MIDDLE	1				N	Y	N	Y	N	N	N	N	Y	N	N	N	M
1	MANINDER	362452	27	R	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	Y	N	N	N	F
1	AVANTIKA	1551141	25	U	P.G.	HIGH	1				N	Y	N	N	N	N	N	N	N	Y	N	N	F
1	BHARTI	1506683	28	U	P.G.	HIGH	3	1	1	1	N	N	N	N	N	N	N	N	N	Y	N	N	F
1	JYOTI	1551933	34	U	P.G.	MIDDLE	2	1		1	N	N	N	Y	N	Y	N	N	Y	N	N	N	M
1	SHWETA	1541148	36	U	P.G.	HIGH	1				N	N	Y	N	N	N	LABETOLOL	Y	N	N	N	N	F
1	MEHAK	709452	29	U	P.G.	HIGH	2	1		1	Y	N	N	N	N	N	N	N	Y	N	N	N	M
1	RUCHI	142847	25	U	GRAD	HIGH	1				N	N	N	N	Y	N	N	N	N	N	Y	N	F
1	SHINA	8528	35	U	P.G.	HIGH	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	M
1	SONI	1457621	24	R	UNEDUCATED	LOWER	5	4			N	N	N	N	N	Y	N	Y	N	N	N	N	F
1	SANDEEP	579886	34	R	GRAD	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
1	SIMRAN	1545409	28	R	GRAD	MIDDLE	3	2		2	Y	N	N	N	Y	N	N	Y	N	N	N	N	M
1	KRITIKA	993902	25	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	Y	N	N	N	F
1	KASHISH	1548572	20	R	12TH	MIDDLE	2		1		N	N	N	N	N	Y	N	Y	N	N	N	N	M

GROUP	mode of delivery	Birth Weight	BW	APGAR 1 Mint	APGAR 5 Mint	time of starting breast feeds (HR)	LAK	IMP of BF	LACK OF LAC COUNS	POSTOP PAIN	INV NIPPLES	EMBARASSED	SUPP. FAMILY	DOESN'T KNOW RIGHT WAY	OUTDATED	INCONV BF	SUPREMACY OF FORMULA FEEDS	CULTURAL BELIEFS	OVERWORKED	DAY NIGHT DIFF	S-T-S CONTACT	LATE TRANSFER TO MOTHER SIDE
0	LSCS	3-3.4	3400	9	10	36-72 HR	N	Y	N	Y	N	N	Y	N	Y	N	N	N	N	N	N	Y
0	LSCS	<2	1800	6	8	36-72 HR	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	Y
0	LSCS	2.5-2.9	2680	8	9	36-72 HR	Y	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2500	7	8	36-72 HR	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	Y
0	NVD	<2	1520	8	9	36-72 HR	Y	N	N	N	N	N	Y	N	Y	Y	Y	N	N	Y	N	Y
0	LSCS	2.5-2.9	2600	9	10	3-6 HR	N	Y	Y	Y	N	N	Y	N	N	N	N	Y	N	N	N	N
0	NVD	2.5-2.9	2840	8	9	3-6 HR	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
0	LSCS	2-2.4	2100	8	10	3-6 HR	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2620	9	10	36-72 HR	Y	N	N	N	N	N	N	Y	N	N	N	Y	N	N	N	Y
0	LSCS	2.5-2.9	2880	8	9	6-12 HR	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	N	N	N
0	LSCS	2.5-2.9	2960	8	10	6-12 HR	N	Y	N	N	N	N	Y	Y	Y	Y	Y	N	N	Y	N	Y
0	LSCS	2.5-2.9	2760	7	10	6-12 HR	Y	Y	N	Y	N	N	Y	Y	Y	N	Y	N	N	N	N	Y
0	LSCS	2.5-2.9	2960	9	10	6-12 HR	Y	N	N	Y	N	Y	Y	Y	N	Y	Y	N	N	N	N	Y
0	LSCS	2-2.4	2200	9	10	6-12 HR	Y	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2780	9	10	6-12 HR	N	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	Y	N	N
0	LSCS	<2	1940	8	9	6-12 HR	Y	Y	N	N	N	N	Y	N	Y	Y	Y	N	N	N	N	Y
0	LSCS	3-3.4	3280	9	10	6-12 HR	N	N	N	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N
0	LSCS	2-2.4	2420	6	8	6-12 HR	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	N	N	N	N	N
0	LSCS	2-2.4	2420	7	9	6-12 HR	Y	Y	N	Y	N	N	Y	N	Y	Y	Y	N	N	N	N	N
0	LSCS	2.5-2.9	2980	8	10	>72 HR	Y	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	Y
0	LSCS	2.5-2.9	2760	8	9	>72 HR	N	Y	N	N	Y	N	Y	N	N	N	N	N	N	Y	N	N
0	LSCS	3-3.4	3200	8	10	6-12 HR	N	N	N	N	N	N	Y	N	Y	Y	Y	Y	N	N	N	N
0	LSCS	2-2.4	2380	8	10	6-12 HR	N	N	Y	Y	N	Y	N	Y	N	N	N	N	N	N	N	N
0	LSCS	3-3.4	3280	6	9	6-12 HR	Y	Y	N	N	N	Y	Y	N	N	N	N	N	Y	N	N	N
0	LSCS	2.5-2.9	2720	9	10	6-12 HR	N	Y	N	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N
0	LSCS	2-2.4	2420	6	8	6-12 HR	N	Y	N	Y	N	Y	Y	N	Y	Y	Y	N	N	Y	N	Y
0	LSCS	2.5-2.9	2600	9	10	>72 HR	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
0	LSCS	2.5-2.9	2740	7	10	>72 HR	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
0	LSCS	3-3.4	3240	9	10	NOT STARTED	Y	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	N	N
0	LSCS	2-2.4	2300	8	10	NOT STARTED	Y	Y														
1	LSCS	3-3.4	3480	8	9	6-12 HR	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	YES
1	LSCS	2-2.4	2100	8	10	12-24 HR	Y	Y	N	N	N	Y	Y	Y	Y	Y	N	N	N	Y	N	YES
1	LSCS	2-2.4	2380	8	9	3-6 HR	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	YES
1	LSCS	2.5-2.9	2960	8	10	3-6 HR	Y	Y	N	N	N	Y	Y	Y	Y	Y	N	N	N	Y	N	YES
1	LSCS	2.5-2.9	2840	7	9	3-6 HR	Y	Y	N	N	N	Y	Y	Y	Y	Y	N	N	N	Y	Y	YES
1	LSCS	2-2.4	2400	9	10	6-12 HR	Y	N	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	YES
1	LSCS	3-3.4	3140	8	9	6-12 HR	Y	N	Y	Y	N	Y	N	Y	N	N	N	N	N	Y	N	YES
1	LSCS	2-2.4	2340	7	8	3-6 HR	Y	N	N	Y	N	N	Y	Y	N	N	Y	N	N	Y	N	YES
1	LSCS	2.5-2.9	2600	9	10	1-3 HR	N	Y	Y	Y	N	N	N	N	Y	Y	Y	N	N	N	Y	N
1	NVD	2.5-2.9	2900	9	10	<1 HR	N	Y	N	N	N	N	Y	N	Y	Y	N	N	N	Y	Y	N
1	LSCS	3-3.4	3360	8	9	3-6 HR	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N
1	LSCS	2.5-2.9	2980	8	9	6-12 HR	Y	Y	Y	N	N	N	Y	Y	Y	Y	N	N	Y	Y	N	YES
1	LSCS	2.5-2.9	2840	9	10	6-12 HR	Y	Y	N	N	N	Y	Y	Y	Y	Y	N	N	N	Y	N	YES
1	LSCS	2.5-2.9	2650	7	8	3-6 HR	Y	N	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	YES
1	NVD	2.5-2.9	2500	8	10	<1 HR	Y	N	Y	N	N	Y	Y	Y	N	N	N	N	N	Y	Y	N
1	LSCS	3-3.4	3220	9	10	3-6 HR	Y	N	N	Y	N	N	Y	Y	N	N	N	Y	N	N	N	N
1	LSCS	2.5-2.9	2640	9	10	6-12 HR	Y	Y	N	N	N	N	Y	Y	Y	Y	Y	N	N	Y	N	YES
1	LSCS	2-2.4	2400	9	10	12-24 HR	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	YES
1	NVD	2.5-2.9	2960	9	10	<1 HR	Y	Y	N	N	N	Y	N	Y	Y	Y	N	Y	N	Y	Y	N
1	LSCS	3.5-3.9	3540	8	9	6-12 HR	N	Y	Y	N	N	N	Y	N	Y	Y	N	Y	N	N	N	YES
1	NVD	2.5-2.9	2800	9	10	<1 HR	N	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	Y	Y	N
1	NVD	2-2.4	2340	9	10	<1 HR	N	Y	Y	N	N	N	Y	N	Y	Y	Y	Y	N	N	Y	N
1	LSCS	2-2.4	2480	8	10	6-12 HR	N	Y	N	N	N	N	Y	N	Y	Y	N	N	N	Y	N	YES
1	LSCS	2.5-2.9	2940	9	10	6-12 HR	N	Y	N	N	N	N	Y	N	Y	Y	N	N	N	N	N	YES
1	NVD	2.5-2.9	2940	8	10	<1 HR	N	Y	N	N	N	N	Y	N	Y	Y	Y	N	N	Y	Y	N
1	NVD	3-3.4	3000	9	10	<1 HR	Y	N	N	N	Y	Y	Y	Y	N	N	Y	N	N	N	Y	N
1	LSCS(GA)	2-2.4	2000	8	9	24-36 HR	N	N	N	N	N		Y	N	N	N	N	N	N	Y	N	YES
1	LSCS	2.5-2.9	2920	8	9	12-24 HR	N	Y	N	Y	N	N	N	N	Y	Y	Y	N	N	Y	N	YES
1	LSCS	3-3.4	3180	9	10	6-12 HR	Y	N	N	Y	N	Y	Y	Y	N	N	N	N	N	Y	N	YES
1	LSCS	3-3.4	3180	9	10	6-12 HR	N	N	N	N	N	Y	N	N	N	N	Y	N	Y	Y	N	YES
1	NVD	2.5-2.9	2560	9	10	<1 HR	N	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	Y	N
1	LSCS	2.5-2.9	2780	9	10	3-6 HR	N	Y	Y	Y	N	N	N	N	Y	Y	Y	N	N	Y	N	N
1	LSCS	2-2.4	2240	8	10	6-12 HR	Y	N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	YES
1	LSCS	2.5-2.9	2980	9	10	3-6 HR	Y	N	N	Y	N	N	N	Y	N	N	Y	N	N	N	N	YES
1	NVD	2.5-2.9	2760	8	9	<1 HR	Y	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	N	Y	Y	N

GROUP	NAME	MRD	AGE	RURAL/ URBAN	education	s.e. status	GRAVIDA	PARA	ABORTIONS	LIVE	ANEMIA	hypothyroidism	G.HTN	OBS COMPLICATIONS	GDM	LIVER DYSFUNCTION	ongoing medication	36 wks	37 wks	38wks	39 wks	40 wks	gender
1	MANPREET	1313794	32	U	P.G.	HIGH	3	2	2		N	N	N	N	N	N	N	Y	N	N	N	N	M
1	BHAWNA	277434	28	R	12TH	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	M
1	BHAVNA	487328	23	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	N	Y	N	N	N	F
1	BHAVYA	1550265	29	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	M
1	SUDESH	1554305	40	R	12TH	MIDDLE	2		1		N	N	N	N	N	N	N	N	N	N	Y	N	F
1	RUPINDER	1432855	30	U	GRAD	MIDDLE	2	1		1	Y	N	N	N	N	N	N	Y	N	N	N	N	F
2	CHARU	644762	27	U	GRAD	MIDDLE	1				Y	N	N	N	N	N	N	N	N	Y	N	N	F
2	SHIVANI	1153618	26	U	GRAD	MIDDLE	1				N	N	N	N	Y	N	N	N	N	Y	N	N	M
2	NOBALPREET	1516873	28	U	GRAD	HIGH	2		1		N	Y	N	N	N	N	ELTROXIN	N	N	Y	N	N	M
2	SHIVANI	1516874	35	R	12TH	HIGH	4	3		3	N	N	N	N	N	N	N	N	Y	N	N	N	F
2	RASHI	1556557	30	U	GRAD	MIDDLE	1				N	N	N	N	Y	N	N	N	N	Y	N	N	F
2	ERA	1550990	34	U	P.G.	HIGH	2	1		1	N	Y	N	N	N	Y	ELTROXIN	Y	N	N	N	N	F
2	HARJOT	1432377	35	R	12TH	MIDDLE	3		2		N	N	N	N	N	N	N	N	Y	N	N	N	M
2	KAMALDEEP	8773	32	R	10TH	LOWER	2	1		1	N	N	N	N	N	N	N	N	N	N	N	N	M
2	HARDEEP	1555762	30	R	GRAD	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN;LABETOLOL	Y	N	N	N	N	F
2	KONIKA DHIR	1037299	32	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
2	PAYAL	1556753	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N	Y	N	N	N	N	F
2	DIMPLE	1556069	27	U	P.G.	HIGH	1				N	N	Y	N	N	Y	LABETOLOL	N	N	Y	N	N	F
2	RITU	1545572	27	R	12TH	LOWER	1				N	Y	N	Y	N	N	N	N	Y	N	N	N	F
2	RASHMI	1372173	27	R	GRAD	MIDDLE	2		1		Y	N	N	N	N	N	N	N	N	Y	N	N	F
2	JASHAN	165125	35	U	GRAD	HIGH	2	1		1	N	Y	N	N	N	N	N	N	N	N	Y	N	M
2	SPARSH	1558136	30	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	N	N	Y	F
2	MANPREET K	276582	37	R	GRAD	MIDDLE	1				N	Y	N	N	N	N	N	Y	N	N	N	N	F
2	RAJBIR	1556912	27	R	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	F
2	PRIYANKA S	1559571	30	U	GRAD	HIGH	1				N	N	N	N	Y	N	N	Y	N	N	N	N	M
2	RAMAPREET	1558806	32	R	12TH	MIDDLE	3	1	1	1	Y	N	N	N	N	N	N	Y	N	N	N	N	M
2	SUKHJEET	9072	34	R	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	M
2	KOMAL	1560282	22	R	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
2	AKANKSHA B	1480711	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	N	N	Y	M
2	SHIKHA GABA	1479099	36	U	GRAD	HIGH	2	1		1	Y	N	N	N	N	N	N	Y	N	N	N	N	M
2	VARSHA	1474439	32	R	GRAD	HIGH	4	3		3	N	N	N	N	N	N	N	N	N	N	Y	N	F
2	HARPREET K	1437300	30	R	12TH	LOWER	2	1		1	N	Y	N	N	N	Y	ELTROXIN	N	Y	N	N	N	M
2	ANJU	1561659	26	R	GRAD	MIDDLE	3	1	1	1	Y	N	N	N	N	N	N	N	N	Y	N	N	M
2	ISHA	1438967	21	U	12TH	MIDDLE	1				N	N	N	Y	N	N	N	Y	N	N	N	N	F
2	AMANDEEP	1484138	33	R	GRAD	MIDDLE	3	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	M
2	PALAK S	1529299	26	U	GRAD	HIGH	2		1		N	N	N	Y	N	N	N	N	N	Y	N	N	F
2	MONIKA	1370937	25	U	P.G.	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
2	GOURI	1556462	28	U	GRAD	HIGH	1				N	N	N	N	Y	N	N	N	Y	N	N	N	F
2	SWATI	1426260	25	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	N	Y	N	M
2	NAVJOT	1437437	30	U	GRAD	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	M
2	MANJOT	1563882	35	R	GRAD	HIGH	2	1		1	N	Y	N	N	N	N	ELTROXIN	N	Y	N	N	N	M
2	NIDHI S	1563718	40	U	GRAD	HIGH	7	1	5	1	N	N	N	N	N	N	N	Y	N	N	N	N	M
2	KAMALJEET K	1529570	29	R	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	M
2	MANJINDER K	1565294	26	R	GRAD	MIDDLE	2	1		1	N	N	N	N	Y	N	N	N	N	Y	N	N	M
2	NEHA	382172	33	U	GRAD	MIDDLE	3	1	1	1	N	N	N	N	N	N	N	N	Y	N	N	N	F
2	RESHMA	1176056	24	R	10TH	MIDDLE	1				N	N	N	N	N	N	N	N	N	Y	N	N	M
2	KARUNA	1566038	26	U	GRAD	HIGH	1				N	Y	N	N	N	N	ELTROXIN	N	N	N	Y	N	F
2	MANPREET	1449517	29	R	GRAD	MIDDLE	2		1		N	Y	N	N	N	N	ELTROXIN	N	Y	N	N	N	F
3	RAJNI	1553354	27	R	12TH	MIDDLE	1				N	N	N	N	N	N	N	Y	N	N	N	N	M
3	PINKY	838201	32	R	GRAD	MIDDLE	3	2		2	N	N	N	N	Y	Y	N	Y	N	N	N	N	M
3	SHAMITA	1564201	28	U	P.G.	HIGH	1				N	N	N	N	N	N	N	Y	N	N	N	N	M
3	PRATIBHA	1567638	31	R	GRAD	HIGH	1				N	Y	N	N	N	N	ELTROXIN	N	N	N	Y	N	F
3	HARPREET K	618083	34	R	12TH	MIDDLE	3	2		2	N	Y	N	N	N	N	ELTROXIN	Y	N	N	N	N	M
3	PAVIKA PURI	1444235	27	U	GRAD	HIGH	1				N	Y	N	N	N	N	ELTROXIN	N	N	Y	N	N	M
3	SAKSHI GOYAL	1437558	29	U	GRAD	HIGH	1				Y	N	N	N	N	Y	N	N	N	Y	N	N	M
3	NEHA WAHI	1568343	28	U	P.G.	HIGH	1				Y	Y	N	N	Y	N	ELTROXIN	Y	N	N	N	N	M
3	RIMPY DEVI	1508448	26	R	10TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	Y	N	N	N	M
3	PARMEET K	1450030	23	U	GRAD	HIGH	1				N	N	N	N	N	Y	N	N	N	Y	N	N	M
3	KANISHKA	1506662	25	U	GRAD	MIDDLE	2		1		N	N	N	N	N	N	N	N	N	N	N	N	M
3	ANU SHARMA	1206887	34	R	12TH	MIDDLE	2	1		1	N	Y	N	N	N	N	ELTROXIN	N	N	Y	N	N	F
3	PRIYANKA SHARMA	1570489	31	U	GRAD	HIGH	1				N	N	N	N	Y	N	N	N	N	Y	N	N	M
3	SUNITA	1569801	29	R	GRAD	MIDDLE	1				N	Y	N	N	N	Y	ELTROXIN	Y	N	N	N	N	M
3	LOVEPREET	1568990	34	U	P.G.	MIDDLE	2	1		1	N	N	N	N	N	N	N	N	Y	N	N	N	M
3	NEHA	1551289	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	Y	N	N	F
3	SHALU	1543145	28	U	12TH	MIDDLE	1				Y	N	N	N	N	N	N	N	Y	N	N	N	M

GROUP	mode of delivery	Birth Weight	BW	APGAR 1 Mint	APGAR 5 Mint	time of starting breast feeds (HR)	LAK	IMP of BF	LACK OF LAC COUNS	POSTOP PAIN	INV NIPPLES	EMBARASSED	SUPP. FAMILY	DOESN'T KNOW RIGHT WAY	OUTDATED	INCONV BF	SUPREMACY OF FORMULA FEEDS	CULTURAL BELIEFS	OVERWORKED	DAY NIGHT DIFF	S-T-S CONTACT	LATE TRANSFER TO MOTHER SIDE
1	LSCS	2.5-2.9	2660	9	10	6-12 HR	N	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	Y	N	YES
1	NVD	3-3.4	3080	9	10	<1 HR	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N	N	N	Y	Y	N
1	NVD	2.5-2.9	2560	8	10	<1 HR	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	N
1	NVD	2-2.4	2420	9	10	<1 HR	N	Y	N	N	Y	N	Y	N	Y	Y	N	N	N	Y	Y	N
1	LSCS	3.5-3.9	3500	8	9	1-3 HR	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	N	N
1	LSCS	2-2.4	2480	8	9	3-6 HR	N	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	Y	N	YES
2	NVD	3-3.4	3200	5	7	1-3 HR	N	N	Y	N	N	N	N	N	N	N	N	N	Y	N	Y	N
2	NVD	2.5-2.9	2500	9	10	<1 HR	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2860	8	9	3-6 HR	N	Y	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	YES
2	NVD	3.5-3.9	3600	9	10	<1 HR	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	N
2	NVD	2.5-2.9	2740	8	9	<1 HR	N	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	Y	Y	N
2	LSCS	2-2.4	2200	8	9	1-3 HR	N	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	Y	Y	N
2	LSCS	3-3.4	3400	9	10	3-6 HR	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N
2	LSCS	2.5-2.9	2890	9	10	3-6 HR	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	YES
2	LSCS	2.5-2.9	2500	9	10	3-6 HR	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	N	N	N	N	N
2	LSCS	3.5-3.9	3900	9	10	1-3 HR	Y	Y	Y	Y	N	N	N	Y	Y	Y	N	Y	N	N	N	N
2	LSCS	2.5-2.9	2840	8	9	3-6 HR	Y	N	N	Y	N	N	N	Y	N	N	N	N	N	N	N	N
2	LSCS	2.5-2.9	2500	8	9	6-12 HR	Y	N	N	Y	N	N	N	Y	N	N	N	N	N	N	N	YES
2	NVD	2.5-2.9	2600	9	10	<1 HR	Y	N	N	Y	N	Y	N	Y	N	N	N	N	Y	N	Y	N
2	LSCS	3-3.4	3140	9	10	3-6 HR	N	Y	N	Y	N	N	N	N	Y	Y	N	N	Y	N	N	YES
2	LSCS	3.5-3.9	3540	9	10	1-3 HR	Y	Y	N	Y	N	N	N	Y	Y	Y	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2680	6	9	6-12 HR	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N	N	N	YES
2	LSCS	2-2.4	2300	8	9	1-3 HR	N	Y	Y	Y	N	N	Y	N	Y	Y	N	N	N	N	N	N
2	NVD	3-3.4	3300	9	10	<1 HR	Y	Y	N	Y	N	N	Y	Y	Y	Y	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2600	8	9	3-6 HR	N	Y	Y	Y	N	N	Y	N	Y	Y	N	N	N	N	N	N
2	LSCS	2.5-2.9	2560	8	9	6-12 HR	N	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	N	N	YES
2	LSCS	3-3.4	3300	7	9	3-6 HR	Y	Y	N	Y	N	N	Y	Y	Y	Y	N	N	N	Y	N	N
2	NVD	2.5-2.9	2560	8	9	<1 HR	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N	Y	N
2	NVD	3-3.4	3020	8	9	<1 HR	Y	N	Y	Y	N	Y	Y	Y	N	N	N	N	N	Y	Y	N
2	LSCS	2.5-2.9	2760	9	10	3-6 HR	Y	Y	N	Y	N	N	Y	Y	Y	Y	N	N	N	N	Y	N
2	NVD	2.5-2.9	2890	8	9	<1 HR	N	Y	N	N	N	N	N	N	Y	Y	N	Y	N	Y	Y	N
2	LSCS	3-3.4	3400	8	9	3-6 HR	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	N
2	NVD	2.5-2.9	2840	8	9	<1 HR	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	Y	N
2	LSCS	2-2.4	2380	8	9	1-3 HR	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	N	N	N
2	LSCS	2.5-2.9	2600	8	9	6-12 HR	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	N	N	N	YES
2	LSCS	3-3.4	3020	9	10	1-3 HR	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2800	8	9	6-12 HR	Y	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	N	YES
2	NVD	2.5-2.9	2620	8	9	<1 HR	Y	N	N	N	N	N	Y	N	Y	Y	Y	N	N	Y	Y	N
2	LSCS	3-3.4	3440	8	10	1-3 HR	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N
2	NVD	3-3.4	3040	8	9	<1 HR	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	Y	Y	N
2	LSCS	2.5-2.9	2720	9	10	1-3 HR	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	Y	N	N
2	LSCS	2.5-2.9	2840	9	9	1-3 HR	N	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2960	9	10	3-6 HR	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y	N	N
2	LSCS	2.5-2.9	2800	9	9	6-12 HR	N	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	Y	YES
2	LSCS	2.5-2.9	2900	8	9	3-6 HR	Y	Y	N	N	N	Y	Y	N	Y	Y	N	N	Y	Y	N	YES
2	NVD	3-3.4	3060	8	9	<1 HR	N	Y	N	Y	N	Y	Y	Y	N	Y	N	N	N	N	Y	N
2	LSCS	2.5-2.9	2920	9	10	1-3 HR	N	Y	N	Y	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N
2	NVD	2-2.4	2120	8	9	<1 HR	Y	N	N	N	N	N	Y	Y	N	N	N	N	N	N	Y	N
3	LSCS	2.5-2.9	2520	8	10	3-6 HR	N	Y	N	Y	N	Y		Y	Y	Y	Y	Y	N	N	N	N
3	LSCS	2.5-2.9	3000	8	9	1-3 HR	N	Y	N	N	Y	N		N	N	N	N	N	N	N	N	N
3	LSCS	2.5-2.9	2540	8	10	1-3 HR	N	Y	N	Y	N	Y		Y	N	Y	Y	N	N	N	N	N
3	NVD	2.5-2.9	2500	9	10	<1 HR	Y	N	N	N	N	Y		Y	N	N	N	N	N	N	Y	N
3	LSCS	3.5-3.9	3700	8	9	3-6 HR	Y	N	N	N	N	N		N	Y	N	N	N	Y	Y	N	N
3	LSCS	2.5-2.9	2760	8	9	1-3 HR	N	Y	N	N	N	Y		Y	N	Y	N	N	N	N	Y	N
3	LSCS	3-3.4	3360	9	10	3-6 HR	Y	N	N	N	N	N		Y	N	N	N	N	Y	Y	N	N
3	LSCS	2.5-2.9	2700	8	9	3-6 HR	N	Y	N	N	N	Y		Y	N	Y	Y	N	Y	Y	N	N
3	LSCS	2-2.4	2460	9	10	3-6 HR	Y	N	N	N	N	N		N	Y	N	N	Y	N	N	N	N
3	LSCS	3.5-3.9	3540	9	10	6-12 HR	N	Y	Y	Y	N	N		Y	N	Y	Y	Y	N	N	N	YES
3	LSCS	2.5-2.9	2820	8	10	3-6 HR	N	Y	N	Y	N	N		N	Y	N	Y	N	Y	Y	N	N
3	NVD	3-3.4	3200	8	9	<1 HR	N	Y	N	Y	Y	Y		N	N	N	N	N	Y	Y	Y	N
3	LSCS	2.5-2.9	2960	8	9	1-3 HR	N	Y	N	Y	N	N		Y	Y	Y	N	N	Y	Y	N	N
3	LSCS	2.5-2.9	2660	9	10	1-3 HR	N	Y	N	Y	N	N		Y	Y	N	N	N	N	N	Y	N
3	LSCS	2-2.4	2400	8	9	1-3 HR	N	Y	N	Y	Y	N		N	N	N	N	N	N	N	N	N
3	LSCS	2-2.4	2260	8	9	3-6 HR	N	Y	N	Y	N	Y		Y	N	N	N	N	Y	Y	N	N
3	NVD	3-3.4	3040	8	9	<1 HR	Y	N	N	N	N	Y		Y	Y	N	N	N	Y	Y	Y	N

GROUP	NAME	MRD	AGE	RURAL/ URBAN	education	s.e. status	GRAVIDA	PARA	ABORTIONS	LIVE	ANEMIA	hypothyroidism	G.HTN	OBS COMPLICATIONS	GDM	LIVER DYSFUNCTION	ongoing medication	36 wks	37 wks	38wks	39 wks	40 wks	gender
3	BHARTI	315319	30	U	GRAD	MIDDLE	1				N	N	N	N	Y	N	N	Y	N	N	N	N	F
3	LAXMI DEVI	707244	30	R	10TH	MIDDLE	1				N	N	N	N	N	N	N	N	N	N	Y	N	F
3	HARPREET K	1574386	34	R	GRAD	MIDDLE	2	1		1	Y	N	Y	N	N	Y	LABETOLOL	N	N	Y	N	N	M
3	ANANDITA GOYAL	473112	30	U	GRAD	HIGH	2	1		1	Y	N	N	N	N	N	N	N	Y	N	N	N	M
3	MANPREET K	1574361	28	U	GRAD	MIDDLE	1				N	N	N	Y	N	N	N	Y	N	N	N	N	F
3	MONICA ARORA	1062958	28	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	Y	N	N	N	F
3	RAJVINDER K	1575335	40	R	12TH	MIDDLE	3	1	1	1	N	N	N	N	N	N	N	N	N	N	Y	N	F
3	JYOTI SHRIVASTAVA	1575721	31	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N	N	N	N	Y	N	M
3	NEHA JAIN	1576524	31	U	P.G.	HIGH	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	F
3	MEGHA DANG	175339	27	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	N	Y	N	F
3	SWARNIKA	1576746	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N	N	N	N	Y	N	M
3	KAJAL GUPTA	1554920	30	U	GRAD	MIDDLE	3		2		N	Y	N	N	Y	N	ELTROXIN	Y	N	N	N	N	F
3	CHARANDEEP K	1439696	27	R	10TH	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN	N	N	N	Y	N	M
3	ANURADHA	335955	29	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	F
3	PRANJAL JAIN	1572653	28	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	Y	N	N	N	N	M
3	MAMTA	1577021	27	R	GRAD	MIDDLE	1				N	N	N	N	N	Y	N	Y	N	N	N	N	M
3	SNEH PRIYA	1579389	33	U	GRAD	HIGH	1				N	N	N	Y	N	N	N	N	N	Y	N	N	F
3	ROLI BAJPAI	1579714	25	R	10TH	LOWER	3	2		2	Y	N	N	N	N	N	N	N	N	Y	N	N	M
3	SAPNA	1580612	38	R	GRAD	MIDDLE	3	2		2	N	N	Y	N	N	N	LABETOLOL	N	Y	N	N	N	F
3	VANDANA	1568847	25	U	12TH	MIDDLE	1				Y	N	N	N	N	N	N	N	Y	N	N	N	F
3	URVASHI	391300	32	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	N	N	Y	N	N	F
3	SHAGUN	1234374	32	U	GRAD	MIDDLE	3	1	1	1	N	Y	N	N	N	N	ELTROXIN	Y	N	N	N	N	M
3	SHABNAM	1458806	28	U	GRAD	HIGH	1				N	N	N	N	N	N	N	Y	N	N	N	N	F
3	SUMAN	1447464	27	R	12TH	LOWER	1				N	N	N	N	N	N	N	N	Y	N	N	N	F
3	DIVIKA VIJ	1580693	34	U	GRAD	HIGH	1				Y	N	N	N	N	N	N	N	N	Y	N	N	F
4	TEJASWINI	728135	35	U	GRAD	HIGH	2	1		1	N	Y	N	N	N	N	N			Y			M
4	NAVYA	1490787	33	U	P.G.	HIGH	3	1	1	1	N	Y	N	N	N	N	N		Y				F
4	SONIA NEGI	1582659	29	U	GRAD	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN			Y			F
4	SARIKA	1528418	28	R	GRAD	MIDDLE	1				N	N	N	N	N	N	N				Y		M
4	MANU BALA	1059519	30	R	12TH	MIDDLE	3	2		2	Y	N	N	Y	N	N	N			Y			F
4	KANIKA KATYAL	1584527	32	U	GRAD	MIDDLE	2	1		1	N	Y	N	N	N	N	ELTROXIN		Y				M
4	SHIVIKA JAIN	1296954	27	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N			Y			M
4	AASHNA JAIN	111736	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N					Y	M
4	DHRUVIKA	1582998	30	U	P.G.	HIGH	1				N	N	N	N	N	N	N				Y		F
4	SHIWANI GUPTA	644380	30	U	GRAD	MIDDLE	5	3	1	2	N	N	N	Y	N	N	N		Y				M
4	MANJINDER K	1583644	29	R	12TH	MIDDLE	1				N	N	N	N	N	Y	N			Y			M
4	SHAMA KAWAR	522805	29	U	GRAD	MIDDLE	2	1		1	N	Y	N	N	N	N	ELTROXIN			Y			F
4	JYOTI	1414512	29	R	GRAD	MIDDLE	1				N	Y	N	N	N	N	ELTROXIN			Y			F
4	MAITHLI DHIR	1585545	25	U	GRAD	MIDDLE	1				N	Y	N	N	Y	N	ELTROXIN				Y		F
4	POOJA CHAWLA	38796	34	U	P.G.	MIDDLE	4	1	2	1	N	N	N	N	N	N	N			Y			M
4	BINAY	1346242	32	R	GRAD	MIDDLE	2		1		N	N	N	N	N	N	N					Y	F
4	LOVEPREETK	1456388	25	U	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N		Y				M
4	KULWINDER K	1555310	36	R	10TH	MIDDLE	3	1	1	1	N	N	N	N	N	N	N					Y	M
4	DIKSHA	1586218	29	U	GRAD	MIDDLE	1				Y	N	N	N	N	N	N					Y	M
4	NANEY SHARMA	1229463	26	U	GRAD	MIDDLE	2		1		N	Y	N	N	N	N	ELTROXIN			Y			F
4	SIMRANJIT KAUR	1586243	27	R	GRAD	MIDDLE	3		2		N	N	N	N	N	N	N		Y				M
4	BABITA RANI	106127	38	R	GRAD	MIDDLE	5	1	2	1	N	N	N	N	N	N	N		Y				F
4	TARANPREET K	1401774	27	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N			Y			M
4	TANVI KAUR	1587200	29	U	P.G.	HIGH	1				N	N	N	N	N	N	N					Y	F
4	ANJU RANI	298733	35	U	GRAD	MIDDLE	2	1		1	N	Y	N	N	N	N	N	Y					M
4	SHADIKA	1587016	30	U	P.G.	HIGH	1				N	Y	Y	N	Y	N	N	Y					F
4	ANKITA	1585789	25	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N					Y	F
4	RAJNI SHARMA	1588685	34	R	GRAD	MIDDLE	2				N	N	N	N	N	N	N					Y	M
4	PRERNA	1454827	36	R	12TH	MIDDLE	3				N	N	N	N	Y	N	N		Y				F
4	KARAMJEET K	1588219	26	R	GRAD	MIDDLE	1				N	Y	N	N	N	N	N	Y					M
4	SEEMA	946715	32	U	GRAD	LOWER	4	2	1	2	N	N	N	N	N	N	N					Y	M
4	TAMANNA	660987	29	U	P.G.	HIGH	1				N	N	Y	N	N	N	N				Y		F
4	UJALA	1589236	27	U	GRAD	HIGH	1				N	N	N	N	N	N	N			Y			M
4	NIDHI	1161578	27	U	GRAD	MIDDLE	1				N	Y	N	N	N	N	N		Y				M
4	SUNITA RANI	1469461	29	R	GRAD	MIDDLE	1				N	N	N	N	N	N	N			Y			F
4	NEHA GOYAL	107262	35	U	GRAD	HIGH	3	1	1	1	N	N	N	N	N	N	N				Y		F
4	PRIYANKA	1592080	32	U	GRAD	HIGH	1				N	N	N	N	N	N	N				Y		F
4	NAVJOT VITHAL	1592141	27	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N		Y				M
4	REEMA	1591473	20	R	10TH	LOWER	1				N	N	N	N	Y	N	N			Y			M
4	JYOTI	1097592	31	U	GRAD	HIGH	3	1	1		N	N	N	N	N	N	N		Y				M

GROUP	mode of delivery	Birth Weight	BW	APGAR 1 Mint	APGAR 5 Mint	time of starting breast feeds (HR)	LAK	IMP of BF	LACK OF LAC COUNS	POSTOP PAIN	INV NIPPLES	EMBARASSED	SUPP. FAMILY	DOESN'T KNOW RIGHT WAY	OUTDATED	INCONV BF	SUPREMACY OF FORMULA FEEDS	CULTURAL BELIEFS	OVERWORKED	DAY NIGHT DIFF	S-T-S CONTACT	LATE TRANSFER TO MOTHER SIDE
3	LSCS	2.5-2.9	2520	8	9	6-12 HR	N	Y	Y	Y	N	N		Y	Y	Y	Y	Y	N	N	N	YES
3	LSCS	2.5-2.9	2800	9	10	3-6 HR	Y	N	N	Y	N	Y		Y	N	N	N	Y	Y	Y	N	N
3	LSCS	2.5-2.9	2940	8	9	3-6 HR	N	Y	N	Y	N	N		N	Y	N	N	N	N	N	N	N
3	LSCS	2.5-2.9	2500	8	9	1-3 HR	N	Y	N	N	N	N		N	Y	Y	Y	N	Y	Y	Y	N
3	LSCS	2-2.4	2360	8	9	1-3 HR	Y	N	N	Y	N	N		Y	Y	N	N	N	Y	Y	N	N
3	LSCS	3-3.4	3300	8	9	1-3 HR	N	Y	N	N	N	N		Y	Y	N	N	N	N	N	Y	N
3	LSCS	3-3.4	3320	8	9	3-6 HR	Y	N	N	Y	N	Y		N	N	N	N	N	N	N	N	N
3	LSCS	2.5-2.9	2900	8	9	3-6 HR	N	Y	N	N	N	N		Y	N	Y	Y	N	N	N	N	YES
3	LSCS	2.5-2.9	2560	8	9	1-3 HR	N	Y	N	Y	Y	N		N	Y	N	N	Y	N	N	N	N
3	LSCS	3-3.4	3260	9	10	1-3 HR	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	N	N	N	Y	N
3	LSCS	3-3.4	3120	9	10	1-3 HR	N	Y	N	Y	N	N		Y	Y	N	N	N	N	N	N	N
3	LSCS	2.5-2.9	2920	8	10	3-6 HR	N	Y	N	Y	N	N		N	N	N	N	N	Y	Y	N	YES
3	LSCS	3-3.4	3360	9	10	3-6 HR	Y	N	N	Y	N	N		Y	Y	N	N	N	N	N	N	YES
3	LSCS	2-2.4	2360	8	10	6-12 HR	Y	N	Y	Y	N	N		N	N	N	N	Y	Y	Y	N	YES
3	NVD	2.5-2.9	2760	9	10	<1 HR	N	Y	N	Y	N	N		N	N	N	N	Y	N	N	Y	N
3	LSCS	2-2.4	2160	8	9	1-3 HR	N	Y	N	Y	N	Y		Y	N	N	N	N	N	N	Y	N
3	LSCS	2.5-2.9	2520	8	10	1-3 HR	N	Y	N	Y	N	Y		Y	N	N	N	N	N	N	N	N
3	LSCS	3-3.4	3040	9	10	1-3 HR	Y	N	N	Y	N	N		N	Y	Y	Y	Y	N	N	Y	N
3	LSCS	2.5-2.9	2580	9	10	1-3 HR	N	Y	N	N	N	Y		N	N	N	N	N	Y	Y	N	N
3	LSCS	2.5-2.9	2620	8	10	3-6 HR	Y	N	N	N	N	Y	N	Y	N	N	Y	N	Y	Y	N	N
3	NVD	2.5-2.9	2500	8	9	<1 HR	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	Y	N
3	LSCS	3-3.4	3160	9	10	3-6 HR	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
3	LSCS	2.5-2.9	2920	8	10	3-6 HR	Y	N	N	Y	N	Y		Y	N	N	Y	Y	N	N	N	YES
3	LSCS	2.5-2.9	2905	9	10	1-3 HR	N	Y	N	N	N	N		Y	Y	N	Y	N	N	N	Y	N
3	NVD	2-2.4	2460	9	10	<1 HR	N	Y	N	N	N	Y		Y	Y	Y	N	N	N	N	Y	N
4	LSCS	2.5-2.9	2940	9	10	6-12 HR	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	Y	
4	LSCS	2.5-2.9	2720	8	9	6-12 HR	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	Y	N	N
4	NVD	2.5-2.9	2760	9	10	3-6 HR	Y	N	N	N	N	Y	N	Y	N	N	N	N	N	N	Y	Y
4	LSCS	3.5-3.9	3520	8	9	3-6 HR	Y	N	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y
4	LSCS	3-3.4	3190	9	10	3-6 HR	N	Y	N	Y	N	N	Y	N	N	Y	N	N	N	N	Y	Y
4	LSCS	3-3.4	3180	7	9	1-3 HR	Y	N	N	N	N	N	N	Y	N	N	N	N	Y	Y	N	Y
4	LSCS	2.5-2.9	2500	8	9	1-3 HR	N	Y	N	N	N	N	Y	N	N	Y	N	N	Y	Y	N	N
4	LSCS	2.5-2.9	2980	8	10	1-3 HR	Y	N	N	Y	N	Y	Y	N	Y	N	Y	Y	N	Y	N	Y
4	LSCS	3-3.4	3340	8	10	3-6 HR	N	Y	Y	Y	N	N	N	N	N	Y	N	Y	N	Y	N	Y
4	LSCS	3-3.4	3060	8	9	1-3 HR	N	Y	N	Y	N	N	N	Y	Y	N	Y	N	Y	Y	N	Y
4	LSCS	3.5-3.9	3700	8	9	3-6 HR	N	Y	N	Y	N	N	N	Y	N	N	N	N	Y	Y	N	N
4	NVD	2.5-2.9	2700	8	9	1-3 HR	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N	Y	Y	Y	Y
4	LSCS	2.5-2.9	2700	8	9	1-3 HR	N	Y	N	Y	N	N	N	Y	Y	N	Y	N	N	Y	N	N
4	LSCS	3.5-3.9	3640	9	10	3-6 HR	N	Y	N	Y	N	N	N	Y	N	N	N	N	N	Y	Y	Y
4	NVD	2.5-2.9	2860	8	9	1-3 HR	N	Y	N	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	N	N
4	NVD	3-3.4	3360	9	10	3-6 HR	Y	N	Y	Y	N	N	Y	N	Y	N	Y	N	Y	Y	N	Y
4	LSCS	3-3.4	3240	9	10	1-3 HR	N	Y	N	Y	N	N	Y	N	Y	Y	Y	Y	N	N	N	Y
4	LSCS	>4	4020	7	9	1-3 HR	Y	N	Y	Y	N	N	Y	Y	N	N	N	Y	Y	Y	Y	Y
4	LSCS	3-3.4	3400	8	9	3-6 HR	N	Y	N	Y	N	N	Y	N	Y	N	Y	N	N	N	Y	N
4	LSCS	3-3.4	3240	9	10	1-3 HR	N	Y	N	Y	N	N	Y	N	Y	Y	Y	N	Y	Y	N	Y
4	LSCS	3-3.4	3140	8	9	1-3 HR	Y	N	N	N	N	N	Y	Y	Y	N	Y	N	Y	Y	N	Y
4	LSCS	2-2.4	2400	8	9	3-6 HR	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y	N	N	Y	N	Y
4	LSCS	3-3.4	3000	8	10	1-3 HR	Y	N	N	Y	N	N	Y	Y	N	N	N	N	N	Y	Y	Y
4	NVD	3.5-3.9	3500	9	10	<1 HR	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	Y	Y
4	LSCS	3-3.4	3060	8	9	3-6 HR	N	Y	N	N	N	N	N	Y	Y	N	Y	Y	N	Y	N	Y
4	LSCS	2-2.4	2320	8	10	1-3 HR	N	Y	N	N	N	N	N	N	Y	Y	Y	N	N	N	N	Y
4	LSCS	3-3.4	3240	8	9	1-3 HR	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	N	Y	N	Y
4	LSCS	3.5-3.9	3760	8	9	1-3 HR	N	Y	N	Y	N	Y	Y	Y	N	N	N	N	Y	Y	Y	N
4	NVD	2.5-2.9	2520	8	9	1-3 HR	Y	N	N	Y	N	N	Y	N	Y	N	Y	N	N	Y	N	N
4	NVD	2.5-2.9	2940	9	10	3-6 HR	Y	N	Y	Y	N	N	Y	N	N	N	N	Y	Y	Y	Y	N
4	NVD	3-3.4	3200	8	9	1-3 HR	N	Y	N	N	N	N	Y	Y	N	N	N	Y	N	N	Y	Y
4	NVD	3-3.4	3280	7	9	1-3 HR	N	Y	Y	Y	N	N	N	N	N	N	N	N	N	Y	Y	Y
4	NVD	2-2.4	2380	9	10	<1 HR	N	Y	N	N	N	N	Y	Y	N	N	N	N	N	Y	N	Y
4	LSCS	3-3.4	3440	9	10	1-3 HR	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4	LSCS	2.5-2.9	2960	8	9	1-3 HR	N	Y	Y	N	N	N	Y	N	N	N	N	N	Y	Y	Y	Y
4	NVD	2.5-2.9	2800	9	10	1-3 HR	Y	N	N	Y	N	N	Y	N	N	N	N	N	Y	Y	N	Y
4	NVD	3-3.4	3440	7	9	1-3 HR	N	Y	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	N
4	LSCS	3-3.4	3040	9	10	3-6 HR	N	Y	N	N	N	Y	Y	Y	N	N	N	N	N	N	N	N
4	LSCS	3-3.4	3280	8	9	1-3 HR	Y	N	N	Y	N	Y	Y	N	N	N	N	Y	N	Y	N	Y
4	LSCS	2.5-2.9	2880	8	10	3-6 HR	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	N	Y	Y	Y

GROUP	NAME	MRD	AGE	RURAL/ URBAN	education	s.e. status	GRAVIDA	PARA	ABORTIONS	LIVE	ANEMIA	hypothyroidism	G.HTN	OBS COMPLICATIONS	GDM	LIVER DYSFUNCTION	ongoing medication	36 wks	37 wks	38wks	39 wks	40 wks	gender
4	KANCHAN	1024818	32	R	12TH	MIDDLE	3	2		1	N	N	Y	N	Y	N	N	Y					F
4	RAJNI BALA	800410	30	R	12TH	MIDDLE	2	1		1	N	N	N	N	N	N	N	Y					F
4	NEHA KATOD	1651816	31	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N			Y			M
4	KAMALJEET KAUR	1381665	27	R	GRAD	MIDDLE	2	1		1	N	N	N	N	N	N	N			Y			F
4	SHILPA RAWAT	1567802	27	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N					Y	M
4	NEHA GUPTA	1647782	30	U	GRAD	HIGH	1				N	N	N	N	N	N	N		Y				F
4	RAJDEEP	1657545	34	U	P.G.	HIGH	1				N	N	N	N	N	N	N	Y					M
4	HARPAL KAUR	216465	38	R	GRAD	HIGH	4	2	1	2	N	N	N	N	N	Y	N	Y					M
4	MANPREET KAUR	1659352	25	R	GRAD	MIDDLE	1				N	N	Y	N	N	N	N	Y					F
4	RASHMI	1352283	29	U	GRAD	MIDDLE	2	1	1	1	N	N	N	N	N	N	N				Y		F
4	RAMANDEEP	1650474	34	U	GRAD	HIGH	2	1		1	Y	N	Y	N	N	Y	N			Y			M
4	LAXMI	1556564	33	R	5TH	LOWER	3	2		2	N	N	N	N	N	Y	N		Y				M
4	RADHIKA SEHGAL	1658007	31	U	P.G.	HIGH	3	1	1	1	Y	N	N	N	N	N	N	Y					M
4	MANPREET KAUR	1516348	29	U	GRAD	MIDDLE	1				N	Y	N	Y	N	N	ELTROXIN	Y					F
4	SIMRANDEEP KAUR	1664581	31	U	GRAD	HIGH	2	1		1	N	N	Y	N	N	Y	N	Y					F
4	REHA KHANNA	1651849	32	U	P.G.	HIGH	3	1	1	1	Y	Y	N	N	N	N	N			Y			F
4	RIYA PANDEY	1665091	25	R	GRAD	LOWER	1				N	N	N	N	N	Y	N				Y		F
4	POOJA KUMARI	762896	27	R	GRAD	MIDDLE	3	2		1	N	N	N	N	N	N	N		Y				F
4	DIPIKA	979258	35	U	GRAD	HIGH	2	1	1		N	N	N	Y	N	N	N			Y			F
4	BALJINDER	1551233	37	R	P.G.	MIDDLE	2	1		1	N	N	N	N	Y	N	N		Y				F
4	CHARANJEET KAUR	1661351	33	R	10TH	LOWER	3	1	2	1	N	N	N	N	N	N	N		Y				M
4	RAMANDEEP KAUR	1285179	27	R	12TH	MIDDLE	2	1		1	N	Y	N	N	N	N	ELTROXIN				Y		M
4	SUBHAVNA MALHOTRA	1666764	29	U	GRAD	HIGH	1				N	N	Y	N	N	Y	N		Y				M
4	ANJALI SINGLA	1579739	26	U	GRAD	HIGH	1				N	N	N	Y	N	N	N			Y			M
4	TANIYA SUKHIJA	506805	30	U	P.G.	HIGH	1				N	N	N	N	N	N	N			Y			M
4	HARPREET KAUR	381716	32	R	12TH	MIDDLE	3	1	1	1	Y	Y	N	N	N	N	ELTROXIN		Y				M
4	SHASHI BALA	1667518	31	U	GRAD	MIDDLE	2	1		1	N	N	N	N	N	N	N			Y			M
4	PRISHP	1240981	28	U	GRAD	HIGH	1				Y	N	N	Y	N	N	N	Y					M
4	RAMANDEEP K GILL	200654	30	U	GRAD	HIGH	3	2		2	N	Y	N	N	N	N	ELTROXIN			Y			F
4	KHUSHDEEP KAUR	1472350	30	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N					Y	F
4	RUPIKA JAIN	1657429	26	U	GRAD	HIGH	1				N	N	N	N	N	N	N			Y			F
4	SAMIMA ANSARI	1668709	27	R	GRAD	MIDDLE	1				N	N	N	N	N	Y	N				Y		F
4	SAROJINI PRAJAPATI	1669082	25	U	GRAD	HIGH	2		1		N	N	N	Y	N	N	N	Y					M
4	INDU	1644605	32	R	10TH	MIDDLE	1				N	Y	N	Y	N	N	N		Y				M
4	SHIVANGI	1493125	37	U	P.G.	HIGH	5	1	3	1	N	Y	N	N	Y	N	ELTROXIN		Y				M
4	SONAM	1551270	32	R	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N	Y					F
4	PARAMPREET	258107	31	U	GRAD	HIGH	4	1	2	1	N	N	N	N	N	N	N		Y				M
4	RIDHIMA GUPTA	1611715	25	U	GRAD	MIDDLE	1				N	N	Y	N	N	N	N				Y		F
4	RAJINDER KAUR	1661842	29	R	GRAD	MIDDLE	1				N	Y	Y	N	N	N	ELTROXIN	Y					F
4	HIMANI KAPAHI	1110616	34	U	GRAD	HIGH	2	1		1	N	N	N	N	N	N	N		Y				F
4	POOJA SHARMA	989801	34	U	GRAD	MIDDLE	3	1	1	1	N	N	N	N	N	N	N		Y				M
4	SHAIMA	1648781	23	R	4TH	LOWER	1				N	N	N	N	N	N	N				Y		F
4	RICHA	1409487	37	R	12TH	MIDDLE	3	2		1	N	N	N	N	N	N	N		Y				M
4	SANDEEP KHANNA	1544765	38	U	12TH	MIDDLE	3	2		2	N	Y	N	N	N	N	ELTROXIN	Y					M
4	FALAK	1643284	26	U	GRAD	HIGH	1				Y	N	N	N	N	N	N					Y	F
4	TRIPTI DEVI	1659123	25	U	12TH	MIDDLE	1				N	N	N	N	N	Y	N					Y	F
4	SEEMA KAUR	1659363	28	R	GRAD	MIDDLE	1				Y	N	N	N	N	N	N		Y				M
4	SONI	936727	30	R	GRAD	LOWER	4	2	1	2	N	N	N	N	N	N	N		Y				M
4	AMANDEEP KAUR	1639876	30	U	GRAD	MIDDLE	2		1		N	N	N	Y	Y	Y	N	Y					M
4	KAMALJIT KAUR	1494910	28	U	GRAD	MIDDLE	1				N	N	N	N	N	Y	N	Y					M
4	KIRANDEEP KAUR	1266629	32	U	P.G.	MIDDLE	2				Y	N	N	N	N	N	N					Y	M
4	KIRANDEEP	1640387	25	R	GRAD	MIDDLE	2	1		1	Y	N	N	N	N	N	N		Y				F
4	SURBHI SEHGAL	1655412	30	U	P.G.	HIGH	1				N	N	N	N	N	N	N					Y	F
4	RADHA	1672640	26	R	8TH	LOWER	2	1		1	N	N	N	N	N	N	N				Y		F
4	JYOTI SETHIA	1671888	31	U	GRAD	MIDDLE	2		1		N	N	N	N	N	N	N					Y	F
4	NAZIMA BEGUM	1622181	32	U	GRAD	MIDDLE	4	2	1	2	N	N	N	N	N	N	N			Y			F
4	TWINKLE	738752	28	U	GRAD	MIDDLE	1				N	N	N	N	N	N	N				Y		F
4	MANPREET KAUR	1282556	29	U	GRAD	MIDDLE	1				N	N	N	Y	N	N	N				Y		M
4	AMRITPREET KAUR	299179	35	R	12TH	MIDDLE	3	1	1	1	N	N	N	N	N	N	N		Y				F

GROUP	mode of delivery	Birth Weight	BW	APGAR 1 Mint	APGAR 5 Mint	time of starting breast feeds (HR)	LAK	IMP of BF	LACK OF LAC COUNS	POSTOP PAIN	INV NIPPLES	EMBARASSED	SUPP. FAMILY	DOESN'T KNOW RIGHT WAY	OUTDATED	INCONV BF	SUPREMACY OF FORMULA FEEDS	CULTURAL BELIEFS	OVERWORKED	DAY NIGHT DIFF	S-T-S CONTACT	LATE TRANSFER TO MOTHER SIDE
4	LSCS	2.5-2.9	2820	8	9	1-3 HR	N	Y	N	N	N	N	Y	N	Y	Y	Y	N	N	Y	N	Y
4	LSCS	2-2.4	2260	7	9	3-6 HR	N	Y	Y	Y	N	N	N	N	Y	Y	Y	N	Y	Y	N	Y
4	LSCS	3.5-3.9	3580	8	9	1-3 HR	N	Y	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
4	LSCS	2.5-2.9	2720	7	9	3-6 HR	N	Y	N	Y	N	Y	N	N	N	Y	N	N	N	Y	Y	Y
4	LSCS	3-3.4	3000	8	9	3-6 HR	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	Y	Y
4	NVD	3-3.4	3280	8	9	<1 HR	Y	N	N	N	N	N	Y	Y	Y	N	Y	N	N	Y	Y	Y
4	LSCS	2.5-2.9	2720	7	9	1-3 HR	N	Y	N	N	N	N	Y	Y	N	Y	N	N	N	Y	Y	Y
4	LSCS	2.5-2.9	2840	8	9	3-6 HR	Y	N	N	N	N	N	N	Y	N	N	N	N	N	Y	Y	Y
4	LSCS	2.5-2.9	2860	8	9	1-3 HR	N	Y	N	N	N	N	Y	Y	N	Y	N	N	N	Y	N	Y
4	LSCS	2.5-2.9	2760	8	10	3-6 HR	Y	N	N	N	N	Y	Y	N	Y	N	Y	Y	N	Y	N	Y
4	LSCS	2.5-2.9	2960	8	8	3-6 HR	N	Y	Y	Y	N	N	N	Y	N	Y	N	N	N	Y	Y	N
4	NVD	2-2.4	2380	8	10	1-3 HR	N	Y	N	Y	N	N	N	N	Y	N	Y	N	N	Y	N	Y
4	LSCS	2-2.4	2320	8	9	3-6 HR	N	Y	N	Y	Y	N	N	N	N	N	N	N	N	N	N	Y
4	LSCS	2-2.4	2445	8	9	1-3 HR	N	Y	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	N	Y
4	LSCS	2-2.4	2200	8	9	1-3 HR	N	Y	N	Y	N	N	N	Y	Y	N	Y	N	Y	N	N	Y
4	LSCS	3.5-3.9	3680	8	9	3-6 HR	N	Y	N	Y	Y	N	N	Y	N	N	N	N	N	N	Y	Y
4	LSCS	2.5-2.9	2700	8	9	3-6 HR	N	Y	N	Y	N	Y	Y	N	N	N	N	N	N	Y	N	N
4	NVD	3-3.4	3240	8	9	3-6 HR	Y	N	Y	N	N	N	Y	Y	Y	N	Y	N	N	Y	N	Y
4	LSCS	3-3.4	3140	8	9	1-3 HR	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	N	N
4	LSCS	2.5-2.9	2620	8	10	3-6 HR	Y	N	Y	Y	N	N	Y	Y	N	N	N	N	N	N	Y	Y
4	NVD	2.5-2.9	2570	8	9	<1 HR	N	Y	N	Y	N	N	Y	N	Y	N	Y	N	N	N	N	Y
4	NVD	2.5-2.9	2900	8	10	1-3 HR	N	Y	N	N	N	N	Y	N	Y	Y	Y	N	N	Y	Y	Y
4	LSCS	2-2.4	2380	8	9	3-6 HR	Y	N	N	Y	N	N	Y	N	Y	N	Y	N	N	N	Y	Y
4	LSCS	3-3.4	3200	8	9	1-3 HR	N	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	N	Y
4	LSCS	3-3.4	3320	8	9	3-6 HR	Y	N	N	Y	N	N	Y	N	N	N	N	Y	N	N	N	Y
4	NVD	2-2.4	2440	8	9	1-3 HR	N	Y	N	N	N	N	N	N	N	Y	N	Y	N	Y	Y	Y
4	NVD	3-3.4	3100	8	9	<1 HR	N	Y	N	Y	Y	N	N	N	Y	N	Y	N	N	Y	Y	Y
4	LSCS	2-2.4	2240	8	9	3-6 HR	N	Y	N	Y	N	N	N	Y	Y	Y	Y	N	Y	Y	N	Y
4	LSCS	3.5-3.9	3760	8	9	1-3 HR	N	Y	N	Y	N	Y	Y	N	Y	N	Y	N	N	Y	N	Y
4	LSCS	>4	4400	8	10	3-6 HR	N	Y	N	Y	N	Y	Y	N	N	N	N	N	N	Y	N	N
4	LSCS	2.5-2.9	2800	8	9	3-6 HR	Y	N	N	Y	N	N	Y	Y	Y	N	Y	N	N	Y	N	N
4	NVD	2-2.4	2480	8	9	1-3 HR	Y	N	Y	Y	N	N	Y	N	N	N	N	N	N	Y	Y	N
4	LSCS	2-2.4	2000	7	9	1-3 HR	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y	N	Y
4	LSCS	2-2.4	2440	8	9	3-6 HR	N	Y	Y	Y	N	N	N	Y	N	N	N	N	N	Y	N	Y
4	LSCS	3-3.4	3460	9	10	3-6 HR	N	Y	N	Y	N	N	Y	Y	N	N	N	N	N	Y	N	Y
4	LSCS	2-2.4	2220	9	10	3-6 HR	Y	N	N	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y	Y
4	NVD	2.5-2.9	2640	8	9	1-3 HR	N	Y	Y	N	N	N	Y	Y	N	N	N	N	N	Y	N	Y
4	LSCS	2-2.4	2320	8	9	1-3 HR	Y	N	N	N	N	N	Y	N	N	N	N	N	N	Y	Y	Y
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4	LSCS	2.5-2.9	2860	8	10	3-6 HR	N	Y	N	N	N	Y	Y	N	N	N	N	N	Y	Y	Y	Y
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4	NVD	2.5-2.9	2800	8	9	<1 HR	N	Y	N	N	N	Y	Y	N	Y	N	Y	N	N	Y	N	Y
4	LSCS	3-3.4	3000	8	9	3-6 HR	N	Y	N	N	N	N	Y	N	Y	Y	Y	Y	N	Y	Y	Y
4	LSCS	2.5-2.9	2860	8	10	1-3 HR	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	N	Y	N	Y
4	NVD	2.5-2.9	2980	8	9	1-3 HR	Y	Y	N	N	Y	N	Y	N	N	N	N	Y	N	Y	N	Y
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4	NVD	>4	4260	9	10	1-3 HR	N	Y	N	N	N	N	Y	Y	N	Y	N	Y	N	N	Y	Y
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4	LSCS	2.5-2.9	2800	8	10	3-6 HR	N	N	N	Y	N	N	Y	Y	N	Y	Y	Y	N	Y	N	Y
4	NVD	2.5-2.9	2880	9	10	1-3 HR	Y	Y	N	Y	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	N
4	LSCS	3.5-3.9	3720	8	10	3-6 HR	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	Y
4	LSCS	4-4.5	4000	9	10	3-6 HR	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	Y

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No. BFUHS/2K23p-TH/ 97 Date 1/1/24

The Principal
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Subject:: Approval of Plan of Thesis.

This is to inform you that the Faculty of Medical Sciences in its meeting held on 25.09.2023 has approved the plan of thesis of **Kirti Puri**, a student of your college for **MD Paediatrics** along with the names of Supervisor/Co-Supervisor as under:-

Topic Plan of Thesis
A quality initiative to improve rates of early breastfeeding in a tertiary care hospital in punjab .

Supervisor
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Co-Supervisor:-
Dr. Deepak Bhat
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The student may submit the thesis in triplicate alongwith the plan in triplicate also, to the Controller of Examinations, BFUHS, Faridkot, at least six months before the commencement of theory examination, if he/she is otherwise eligible to take the examination. He /She may be directed to attach a photocopy of this letter with the forwarding letter while submitting thesis in the University along with the letter of approval of University for change of supervisor/Co-Supervisor, change of topic, if any.

Controller of Examinations

Note :

1. *If any discrepancy found regarding topic of thesis or Supervisor/Co-Supervisor, inform undersigned within one month after issue of this letter.*

A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB

THESIS PROPOSAL

FOR APPROVAL OF SUBJECT OF THESIS TO BE SUBMITTED IN

PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MD

In

PAEDIATRICS

OF THE

BABA FARID UNIVERSITY OF HEALTH SCIENCES

FARIDKOT

JULY, 2022

Dr. Kirti Puri

DEPARTMENT OF PAEDIATRICS
DAYANAND MEDICAL COLLEGE AND HOSPITAL
LUDHIANA

ABSTRACT OF PLAN OF THESIS

Title	A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB
For the degree of	MD PEDIATRICS
Name of the candidate	Dr. Kirti Puri
Supervisor	Dr. Kamaldeep Arora, Professor, Department of Pediatrics, DMCH, Ludhiana
Co-Supervisor	Dr. Deepak Bhat, Professor, Department of Pediatrics, DMCH, Ludhiana Dr. Ashima Taneja, Professor& Head, Department ofObst & Gynae, DMCH, Ludhiana
Institution	Dayanand Medical College and Hospital,Ludhiana
University	Baba Farid University of Health Sciences, Faridkot

Introduction: The present proposal pertains to an observational study to assess the factors affecting the timely initiation of breastfeeding in a tertiary care hospital in Punjab. Identifying these deterrents the quality improvement tools will be developed and implemented to enhance the current rates of breastfeeding with emphasis on starting of breastfeeding with an hour of birth as recommended by the World Health Organization.

Aims and Objectives:

- To study the prevalence of breast feeding and identify the factors those are deterrent to breastfeeding practices in our hospital.
- To evolve quality improvement tools to help overcome the barriers to initiation of breast feeding in the first hour of birth itself and also enhance the rates of new-borns being breastfed in our hospital.

Materials and Methods:
A baseline cross sectional assessment will be done to document the prevalence of breast feeding and timing of initiation. For the assessment, the time from delivery to initiation of breastfeeding will be closely observed and mothers will be interviewed regarding problems they face. Various people involved will be mothers, family elders, lactation nurses, paediatric faculty, maternal and childcare staff nurses. The recorded responses will then be analysed and QI tools will be developed to overcome the same in sequential PDSA cycles.

Clinical significance:
The proposed study will bring out the factors affecting the initiation of breastfeeding within the first hour of the baby in our department. This information will be used to develop the quality improvement tools to achieve the proposed objectives.
In the second stage of the study the developed QI tools will be implemented at our hospital and brief observational study will be carried out to look into the Quality improvement thus achieved.

Keywords: Breastfeeding, Quality Improvement tools, WHO

(Signature) Candidate	(Signature) Co-supervisor	(Signature) Supervisor	(Signature) Principal

CERTIFICATE OF FACILITIES AVAILABLE

This is to certify that the facilities for work on the subject of thesis titled **"A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB"** exist in the Department of Pediatrics at Dayanand Medical College and Hospital, Ludhiana and will be provided to the candidate. We will see that the data being included in the thesis are genuine and is collected by the candidate herself under our supervision and guidance.

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APPROVAL PROFORMA
BY
RESEARCH & ETHICAL COMMITTEE
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3	COURSE OF STUDY AND SUBJECT	MD Paediatrics
4	DATE OF ADMISSION OF COURSE	5th March 2022 (Session 2021-22)
5	TITLE OF THE TOPIC	A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREAST FEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB

Key Words: Quality Improvement, Breast feeding, Paediatrics

6. BRIEF RESUME OF THE INTENDED WORK

6.1 INTRODUCTION

World Health Organization (WHO) [1] and American Academy of Pediatrics (AAP) [2] recommend that the infants should be exclusively breast fed or given breast milk for 6 months. Feedings should be initiated soon after birth unless medical conditions preclude them. Breast feeding practices are imperative to achieve growth, development and health.

Conditions for which human milk may have a protective effect	
Diarrhoea	Crohn's disease
NEC	Lymphoma
Septicemia	Leukemia
Botulism	Allergy
Insulin dependent diabetes mellitus	Hospitalization
Celiac disease	Infant mortality
Otitis media	Recurrent otitis media

Under WHO Global Nutrition Targets 2025, the goal for breastfeeding is to increase the rates of exclusive breastfeeding to 50% from the current figure of 41% in first 6 months globally.

The health and economic costs of suboptimal breastfeeding are largely unrecognized. Suboptimal breast feeding leads to more than 8,00,000 infant deaths. Countries lose more than 300 billion $ annually because of low breastfeeding rates.

According to WHO reports, 3 out of 5 babies are not breast fed in first hour of life globally while only 41% of infants under the age of 6months are exclusively breastfed.

India is supposed to be a breastfeeding nation but UNICEF [3] expanded global databases 2021 suggests otherwise;

- Exclusive breast feeding national data: 58%
- Early initiation of breast feeding trends: 56%
- 12-23 months old breast feeding trends: 79.5%

Though there has been an improvement in the percentage of children who were exclusively breastfed when less than six months – from 55% in NFHS-4[4] to 64% in NFHS-5[5] but data [3] also reveals that 19.4% newborns are being fed formula milk in first 2 days of life.

According to WHO [1] global formula milk industry is 55 billion$ and there has been a rising trend of formula milk feeding over breast feeding.Breast milk has antibacterial factors like secretory IgA, lactoferrin which is a immunomodulator and has an antimicrobial action, also acting as a trophic factor for intestinal growth. There is presence of casein, oligosaccharides and cytokines which have anti-inflammatory action and simultaneously fulfil the role of epithelial barriers. There are certain growth factors like epidermal growth factor, transforming growth factor and nerve growth factors which have an important contribution in the luminal surveillance, promotion of epithelial cell growth, suppression of lymphocyte function. Presence of enzymes like PAF(Platelet activating factor), glutathione peroxidase which prevents lipid oxidation make the breast milk superior to formula feeds which are preferred by >50% of parents during 1st 6 months of life. However, formula feeds are a blessing for the children in which medical conditions preclude the use of breast milk and parents must be guided on the correct ways to use the same. Formula feedings should be ad libitum, with the goal of achieving growth and development to the child's genetic potential.

Possibility of infection can be managed when breastfeeding is initiated early in children and initial vaccinations are administered well. Child malnutrition is a reason for 68% of the under five deaths in India, as published in LANCET recently [6]. Optimal breastfeeding has a great potential impact on prevention of child mortality due to malnutrition.

The success of breast feeding initiation and continuation depends on multiple factors, such as education about breast feeding, hospital breast feeding practices and timely follow up care, and support of the family. In 1991, WHO and UNICEF launched a program Baby Friendly Hospital Initiative under the World Alliance for Breastfeeding Action

with an aim of improving the breastfeeding practices in hospitals with maternity services. Innocent declaration was formulated in year 1991 to promote, protect and support the breastfeeding practices. WABA was formulated to execute the goals under the memorandum which is responsible for spreading awareness and importance of breast feeding at a global level. Every year WABA designs a theme and slogan to represent World Breastfeeding week celebrated in month of August. The theme for 2022 is “Step up for breastfeeding. Educate and Support”.

In 2016, Government of India launched “Mothers Absolute Affection” programme to promote, protect and support the breastfeeding practices through health care systems in order to increase the prevalence of exclusive breast feeding.

Translation of evidence based interventions into effective clinical practice is a challenging task. After birth, we usually separate mother and normal newborn to provide routine care to newborn. This causes delay in initiation of breastfeeding.

Keeping these facts in mind, we realized that breastfeeding initiation is often delayed in our hospital setting. On problem identification we decided to start QI initiative in our unit with primary objective of highlighting the barriers and devise QI tools for the samewhich would help improve the breastfeeding practices while secondary objective will be to ensure sustainability of higher rates of breastfeeding at our hospital.

6.2 REVIEW OF LITERATURE

A study by Sultania et al [7] was carried out to assess knowledge, attitude and practices of breast feeding among women visiting a tertiary care centre in India. They concluded that, though breast feeding is practiced by majority in India but there is a huge gap in knowledge and optimal breastfeeding behaviors. According to their study majority (71.4%) of mothers had general knowledge about breast feeding and have a belief about breast milk being the best milk. About 45% mothers initiated breast feeding within one hour of birth in this study. Also, pre-lacteal feeds were still being given in around 27% cases. The rates of feeding of colostrum were 82% in this study. However, the main reason for not feeding colostrum was found to be the local myths.

Rollins et al [8] studied the determinants of breast feeding and various interventions which could help build an enabling environment for breast feeding. They reported that there wasn't any negative association between caesarean section and early breastfeeding initiation in presence of adequate support. In this study antenatal and postnatal counseling provided more substantial results compared to those obtained by counseling during either period alone, while counseling the target group of fathers gave mixed results.

In a cross sectional study carried out by Randhawa et al [9] in the semi-urban areas of the Patiala city found that only 27% were aware about starting of breastfeeding within an hour of birth but only 24% could start it within this time span. The most common reason for delay in initiation of breastfeeding was lack of knowledge. About 51% considered prelacteal feeding to be right practice while 55% considered colostrum bad for baby. Similar results were yielded in a study by Shaili et al [10] in rural background of Uttarakhand where 82% gave prelacteal feeds and 52% considered colostrum as harmful for the newborn. Their study found a high correlation between the mother's education, high Socio Economic status, family history of antenatal care registration and hospital delivery associated with exclusive breast feeding. It was also found that the nuclear families

were more likely to breast feed their babies than those staying in joint or extended families. A significant positive association was found between history of ANC registration and hospital delivery with prevalence of exclusive breastfeeding.

In another study by Garg et al [11] based in rural Punjab revealed that only 23% mothers could start breastfeeding in first 24 hours of delivery.

In a study carried out in urban population at Chandigarh by Kumar et al[12] showed that only 6% mothers initiated breast feeding within 1 hour of birth while 52% could initiate within 1-6 hours.

A study based in a rural background in Karnataka by Benakappa et al[13] revealed that only 8% of mothers could initiate breastfeeding in first 4-6 hours whereas 62% mothers started sugar water and castor oil as prelacteal feeds. This study found major influence of grandparents and ANMs on breast feeding.

A study by R. Kaur et al[14] based in a secondary care hospital was a quality improvement initiative to improve the rates of early initiation of breast feeding. They investigated various deterrents to early initiation of breast feeding and made QI interventions using minimal resources and noticed significant positive changes immediately after training phase but dipped in subsequent months. But their study wasn't long enough to see the sustenance of results.

In a recent study[15] carried out jointly by the department of Pediatrics, the department of Obstetrics and Gynaecology and Anesthesiology at PGI, Chandigarh looked into the factors responsible for delayed breast feeding initiation after caesarean section primarily and implementing quality improvement (QI) tools to study their impacts. They were able to increase their rates of initiation of breast feeding within one hour of caesarean section tremendously from 0 to 93% using minimal resources. Though they demonstrated enormous success in a short span but couldn't assess the fact whether this will be long lasting and would last even when there are peak delivery loads.

The study by Patyal et al[16] based in MMU, Ambala conducted during 2018-19 pertained to improving first hour breastfeeding in newborns through QI. It is important to note that they excluded all newborns by

caesarean section, premature babies. They concluded that it was feasible to increase the number of newborns being breast fed during the first hour in a low resource setting without increasing the workload of the staff. However, this study was hampered because of Covid.

Study done by Ravi Sachan et al.[17] used various quality improvement tools like skin to skin contact, delayed cord clamping in order to improve the early initiation of breast feeding using the Plan Do Study Act approach. This study was a simple methodology to assess newborn care after birth but had certain limitations. They could not document routine newborn care born via cesarean deliveries, after resuscitation of babies not crying immediately at birth. Also there was inability to evaluate long term and short term effects of implemented QI tools on neonatal mortality and morbidity.

Another study by Ravi Sachanet al.[18] emphasized on importance of using mothers on milk in pre-terms and babies with very low birth weight. It was a quality initiative wherein plan do study act cycles were run in order to reach a final conclusion that simple measures can increase the feeding by manyfold.

A study by Takahashi, K. *et* [19] studied the prevalence of early initiation of breastfeeding and determinants of delayed initiation of breastfeeding revealed that cesarean deliveries were a major factor leading to delayed initiation of breast feeding. There study didn't find a relationship between socio-demographic factors and early initiation of breast feeding. The various causal factors found were maternal intrapartum complications, factors related to staff nurses, high workload and a shortage of human resources. This study had a unique dataset since it included data concurrently during the same time period using standardized record forms right before discharge of the women from hospital at a large number of facilities in multiple countries.

Sisk et al.[20] evaluated the importance of lactational counselling in increasing the incidence of lactation initiation and breast milk feeding without causing maternal stress and anxiety.

Keeping in view the current status of breastfeeding in India, it is proposed to study various hindrances and factors affecting the early initiation of breast feeding and rates of exclusive breast feeding. Based upon this observational study, methods will be designed so as to overcome the same. We will also observe the long term sustenance of implied breastfeeding practices.

6.3 AIMS AND OBJECTIVES OF THE STUDY

- To study the prevalence of breast feeding.
- To study the factors those are deterrent to breastfeeding practices in our hospital.
- To evolve quality improvement tools to help overcome these barriers to initiation of breast feeding in the first hour of birth itself.
- To improve the rates of new-borns being breastfed in our hospital.

7. MATERIALS AND METHODS

This quality improvement initiative is planned to be taken over for a period of 9 months from the date of approval at the department of Paediatrics and Obstetrics & Gynaecology in a tertiary care hospital in Ludhiana, Punjab.

A baseline cross sectional assessment will be done to document the prevalence of breast feeding and timing of initiation.

Various people involved will be mothers, family elders, lactation nurses, paediatric faculty, maternal and childcare staff nurses.

For the assessment the time from delivery to initiation of breastfeeding will be closely observed and mothers will be interviewed regarding problems they face.

Root cause analysis will be done using fish bone diagrams.

The recorded responses will then be analysed and QI tools will be developed to overcome the same in sequential PDSA cycles. A typical PDSA cycle is described below.

Informed consent will be obtained from the participants. Privacy and confidentiality will be maintained strictly.

Design - Prospective, quality improvement study.

Setting – Department of Pediatrics and Obstetrics &Gynaecology in a tertiary care hospital, DMCH Ludhiana, by a predesigned proforma through trained lactation nurse.

Typical PDSA cycle

- **Plan:** A study pertaining to Breastfeeding prevalence, possible deterrents need for Quality improvement tools to boost breastfeeding as early as possible has been planned to be carried out at thedepartment ofPediatrics and Obstetrics & Gynaecology, DMCH. For this purpose extensive literature survey has been done and presented. Aims and objectives have been defined clearly for this study.
- **Do:** To achieve the aims and objectives of the study, sample collection will be started. For his purpose, proforma will be filled with the assistance of lactation nurses from all inborn patients

with their consent. A statistically significant number of samples will be collected over a period of time (Approximately 9 months).

- **Study:** The collected data will be compiled and analysed using statistical tools. Based on results of analysis quality improvement (QI) tools will be designed.
- **Act:** Developed tools will be implemented at our hospital. During implementation period a brief observational study will be carried out for a period of 1-2 months to evaluate impact of implementation of QI tools.
- Another PDSA cycle shall be run to assess the sustenance of implementing QI tools.

7.1 Source of Data:

Sources of data will be all in-born term babies admitted in Department of Pediatrics, DMCH, Ludhiana.

7.2 METHOD OF COLLECTION OF DATA

INCLUSION CRITERIA:

All the inborn term neonates

EXCLUSION CRITERIA:

<34weeks' gestational age, stillbirths, APGAR <7 at 5 minutes, women with severe maternal outcomes, any of the following conditions: women with HIV/AIDS, eclampsia, hysterectomy, admission to ICU, deliveries with general anesthesia.

CLINICAL SIGNIFICANCE

The proposed study will bring out the factors affecting the initiation of breastfeeding within the first hour of the baby in our department. This information will be used to develop the quality improvement tools to achieve the proposed objectives.

In the second stage of the study the developed QI tools will be implemented at our hospital and brief observational study will be carried out to look into the Quality improvement thus achieved.

OUTCOME: The proposed study will bring out the factors affecting the initiation of breastfeeding within the first hour of the birth. This information will be used to develop the quality improvement tools to achieve the proposed objectives.

In the second stage of the study the developed QI tools will be implemented at our hospital and brief observational study will be carried out to look into the Quality improvement thus achieved.

STATISTICAL ANALYSIS

The statistical analysis will be carried out using Statistical package for social sciences (SPSS Inc, USA). Data will be described in terms of range, mean, standard deviation, median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. For comparing categorical data Chi square test will be performed and fisher exact test will be used when the expected frequency will be less than five.

7.3 DOES THE STUDY REQUIRE ANY INVESTIGATIONS OR INTERVENTIONS TO BE CONDUCTED ON PATIENTS OR OTHER HUMANS OR ANIMALS? IF SO, PLEASE DESCRIBE BRIEFLY.

No.

7.4 HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF 7.3?

Yes, Attached herewith.

8. LIST OF REFERENCES

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PROFORMA

Demographics

Sr. No:

Name: Maternal Age:

MRD:

Education: S.E. status:

Parity:

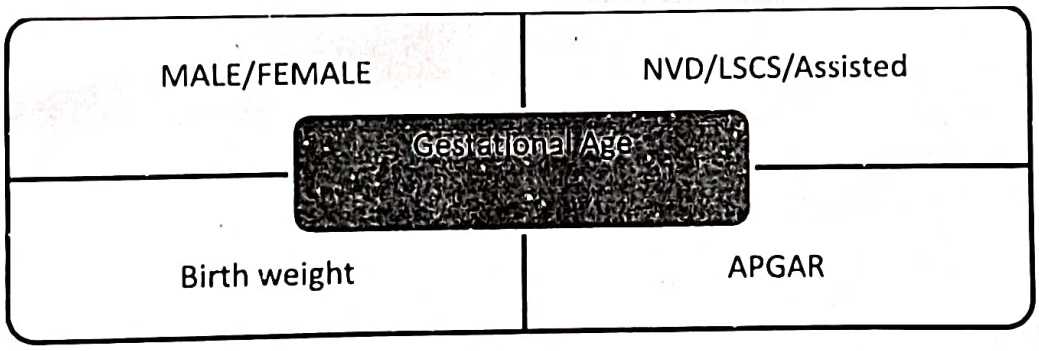
Antenatal problems:

Spontaneous conception:

Ongoing medications:

Antenatal visits:

About the Newborn



	YES / NO
Congenital malformations (cleft lip / palate)	
Need for NICU stay	
Feed intolerance	
Poor attachment and suckling at the breast	

Signature of Candidate

Signature of Supervisor

BF started after: <1 hour ; 1 – 3 hours ; 3 – 6 hours ; 6 – 12 hours ;

12-24 hours

>24 hours

Not before discharge or 7th day of birth

Colostrum fed: Yes / No

If no, why?

Maternal Factors (Y/N)

Lack of knowledge: Did you know the importance of BF before
Do you feel that feed is inadequate
Lack of a dedicated lactation counsellor during night
Lactation failure
Comorbidities: HbsAg, Tb, HIV (reluctance)
Postop pain
Inverted nipples/nipple pain
Do you feel embarrassed
Is the husband / family supportive
Mother doesn't know the right way
Feels that breast feeding is outdated
Are you anxious
Feels bottle feeding is easier/convenient than

Signature of Candidate

Signature of Supervisor

breast feeding

Believes in the supremacy of formula feeds

Others:

Cultural Beliefs

Prelacteal feeds
Think breastfeeding is harmful/not beneficial
Others :

Nursing staff

Overworked
Day night shift difference
Lack of commitment
Others:

At the Delivery room

Immediate skin to skin contact
Practice of delayed cord clamping
Late transfer of mother to post delivery observation room

Discharged on breastfeeding: Y/N

Signature of Candidate **Signature of Supervisor**

INFORMED PATIENT CONSENT

Date: _____

I.....D/o, W/o, S/o..... am willing to participate in the study **"A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB"** The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

मैं _____ पत्नीe/पुत्र/पुत्री _____ _____ निवासी _____ इस शोधकार्य **"A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB"** में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टिग करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देहश्य स्पष्टल कर दिया गया है और मुझे यह विश्वा स है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है। मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्तस कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्ते करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

ਮੈ _____ _____ ਪਤਨੀ /ਪੁੱਤਰ /ਪੁੱਤਰੀ _____ _____ ਵਾਸੀ _____ _____ "A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB" ਤੇ ਚਲਦੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ । ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ । ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ / ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ -ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ । ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ । ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ । ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ । ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ / ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ ।

.....
Signature of the Witness

.....
Signatures of the patient

Signature of Candidate

Signature of Supervisor

INFORMED PATIENT CONSENT

Date: _____

I…….D/o, W/o, S/o……..…… am willing to participate in the study **"A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB"** The procedure with its complications has been explained to me in local vernacular language. I have fully understood that no special tests and extra expenditure in any form, merely for the purpose of thesis is being carried out. I am free to opt out the study any time without assigning any reason.

……. ……
Signature of the Witness Signature of the patient

Name:

Signature of Candidate **Signature of Supervisor**

मरीज अनुमति फार्म

तिथि _____

मैं _____ पत्नी/पुत्र/पुत्री _____

निवासी _____

इस शोधकार्य "**A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB"** में भाग लेने के लिए सहमत हूँ। मैं इस शोधकार्य में भाग लेने के लिए अपनी स्वेच्छा से तैयार हूँ। मैं पुष्टि करता/करती हूँ की यह स्वीकृति देने के लिए मुझे कोई आर्थिक प्रलोभन नहीं दिया गया और न ही दबाव डाला गया है। मुझे इस शोधकार्य का उद्देश्य स्पष्ट कर दिया गया है और मुझे यह विश्वास है की यह विज्ञान और मानवता के लाभ के लिए है। मुझे इस शोधकार्य में होने वाले जोखिम के बारे में समझा दिया गया है और मेरी समझ में यह जोखिम बहुत मामुली है।

मैं इस शोधकार्य में भाग लेने के सम्बन्ध में किसी भी समय अपनी अस्वीकृति व्यक्त कर सकता/सकती हूँ और मेरे अस्वीकृति व्यक्त करने का मेरे इलाज पर कोई प्रभाव नहीं पड़ेगा।

_____	_____
गवाह के हस्ताक्षर	रोगी के हस्ताक्षर/अंगूठे का निशान
नाम:	नाम:

_____

अन्वेषक के हस्ताक्षर

_____

विद्यार्थी के हस्ताक्षर

ਮਰੀਜ਼ ਰਜ਼ਾਮੰਦੀ ਫਾਰਮ

ਮਿਤੀ_____

ਮੈ_____ਪਤਨੀ/ਪੁੱਤਰ/ਪੁੱਤਰੀ_____

ਵਾਸੀ _____

“A QUALITY INITIATIVE TO IMPROVE RATES OF EARLY BREASTFEEDING IN A TERTIARY CARE HOSPITAL IN PUNJAB” ਤੇ ਚਲ ਰਹੀ ਖੋਜ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਰਜ਼ਾਮੰਦ ਹਾਂ। ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਲਈ ਮੈ ਆਪਣੀ ਮਰਜ਼ੀ ਨਾਲ ਤਿਆਰ ਹਾਂ। ਮੈ ਇਹ ਦਸਣਾ ਚਾਹੁੰਦਾ ਹਾਂ/ ਚਾਹੁੰਦੀ ਹਾਂ ਕੇ ਇਹ ਰਜ਼ਾਮੰਦੀ ਦੇਣ ਵਾਸਤੇ ਮੈਨੂ ਕਿਸੇ ਵੀ ਤਰਾਂ ਦਾ ਲੋਭ-ਲਾਲਚ ਨਹੀ ਦਿੱਤਾ ਗਿਆ ਅਤੇ ਨਾ ਹੀ ਕੋਈ ਦਬਾ ਪਾਇਆ ਗਿਆ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਦਾ ਮਨੋਰਥ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਭਰੋਸਾ ਦਵਾਇਆ ਗਿਆ ਹੈ ਕੇ ਇਹ ਖੋਜ ਵਿਗਿਆਨ ਅਤੇ ਮਾਨਵਤਾ ਦੀ ਭਲਾਈ ਲਈ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਵਿਚ ਹੋਣ ਵਾਲੇ ਖਤਰੇ ਬਾਰੇ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ ਅਤੇ ਮੈਨੂ ਇਹ ਯਕੀਨ ਹੈ ਕੇ ਇਹ ਖਤਰਾ ਬਹੁਤ ਮਾਮੂਲੀ ਹੈ। ਮੈਨੂ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਦਾ ਢੰਗ – ਤਰੀਕਾ ਸਮਝਾ ਦਿੱਤਾ ਗਿਆ ਹੈ।

ਮੈ ਇਸ ਖੋਜ ਕੰਮ ਵਿਚ ਹਿੱਸਾ ਲੈਣ ਬਾਰੇ ਆਪਣੀ ਰਜ਼ਾਮੰਦੀ ਕਿਸੇ ਵੀ ਸਮੇ ਵਾਪਸ ਲੈ ਸਕਦਾ ਹਾਂ/ ਸਕਦੀ ਹਾਂ ਅਤੇ ਮੇਰੀ ਰਜ਼ਾਮੰਦੀ ਵਾਪਸ ਲੈਣ ਦਾ ਮੇਰੇ ਇਲਾਜ ਤੇ ਕੋਈ ਅਸਰ ਨਹੀ ਹੋਵੇਗਾ।

_____ _____

ਗਵਾਹ ਦੇ ਹਸਤਾਖਰ ਮਰੀਜ਼ ਦੇ ਹਸਤਾਖਰ

ਮਿਤੀ_____ ਮਿਤੀ_____

ਪਤਾ _____ ਪਤਾ _____

_____

ਨਿਰੀਖਕ ਦੇ ਹਸਤਾਖਰ

_____

ਸਿਖਿਆਰਥੀ ਦੇ ਹਸਤਾਖਰ